

# ANNALS OF MEDICAL HISTORY

PUBLISHED QUARTERLY

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# ANNALS OF MEDICAL HISTORY



VOLUME III

SUMMER 1921

NUMBER 2

## MONTAIGNE AND MEDICINE

By J. S. TAYLOR, M.D.

WASHINGTON, D. C.

MONTAIGNE'S CLAIM TO THE NOTICE OF THE PROFESSION



NO MATTER how soon the adult reader is introduced to Montaigne he will always regret not having come earlier under the spell of this rare spirit. Of all the philosophers of the past not one makes as strong an appeal to the physician as Montaigne. He was for years a great sufferer from maladies which the profession could not alleviate and so we are, in a sense, his debtors. Like the true physician he held everything *sub judice*, unable to declare that the last word had been said, unwilling to speak with finality on the thousand and one things which he observed and studied. In analyzing human thought and conduct he was a model for the physician who studies pathology and symptoms, and many are the analogies between his situation, his mode of thought, his character and temperament and those of the profession. He recorded truthfully the phenomena that came within the range of his faculties, fearless of the deductions others might make

from them and withal modest in the expression of his own. Right or wrong he wrote "in good faith."

Like the medical writer handicapped by an ever-changing vehicle of expression, an ever-altering nomenclature and phraseology liable to leave him stranded in the ranks of the obsolete, Montaigne wrote while the French language was in transition, an unstable medium; wrote with a brightness, a lightness of touch, an insouciance without precedent or imitation, he and Rabelais being the last to fashion its plastic shape before the stabilizing influence of the Academy. But his homely, graphic phrases, his vivid touch, will always be in fashion like the language of the King James version of the Bible. And so, in medicine, we shall always know what our predecessors meant by a clyster whether it be the passing fashion to say *énema* or *enéma*. Montaigne's style was simple in so far that he was guilty of no affectation, no striving for effect. "May I use no words but those which are current in the Paris markets," he explained; and medical writers who cannot call a spade

a spade, who prefer "ecchymosis of the subpalpebral areolar tissue" to "a black eye," should take a leaf from his notebook.

Montaigne in his "Essays" pretends to no epoch-making discovery in the realms of human thought and claims to enunciate nothing novel or startling. His study was mankind, with himself as the readiest subject of practical dissection. His comments are like the clinical notes of the general practitioner and if his writings were to become inaccessible to the modern reader we would still be under obligations to him for all the delightful things that have been written about him and them. Many are the hypotheses and speculations he builds on the data acquired. A further analogy between Montaigne and the general run of physicians is that he had to take many of his authorities at secondhand. He read his favorite Plutarch in Amyot's translation for he knew no Greek. Just as we must accept the dicta of technical investigators and sometimes be compelled to hear them confuted, Montaigne was at least once openly confronted with Amyot's mistakes, and he still suffers for the inaccuracy of those he quoted.

Like the average doctor, Montaigne was a poor business man and but for an efficient, capable and faithful wife his estate would have gone to pot. He wrote a bad hand, was extremely forgetful and strangely impractical in many of the ordinary affairs of life. A few passages which follow give his own estimate of his shortcomings.

There is not a man living, whom it would so little become to speak of memory as myself, for I have none at all; and do not think that the world has again another so treacherous as mine. (Of Liars.)

Agility and address I never had and yet am the son of a very active and spritely father, and that continued to be so to an extreme old age. I have seldom known any man of his condition, his equal in all bodily exercises: as I have seldom met with any who have not excelled me, except in running, at which I

was pretty good. In music or singing, for which I have a very unfit voice, or to play on any sort of instrument, they could never teach me anything. . . . My hands are so clumsy, that I cannot so much as write so as to read it myself, so that I had rather do what I have scribbled over again, than to take upon me the trouble to correct it, and do not read much better than I write. I cannot handsomely fold up a letter, nor



Facsimile of the title page of Montaigne's "Essays" (Edition of 1588).

From "Montaigne, L'Homme et L'Oeuvre," by P. Bonnefon, Paris, 1893.)

could ever make a pen, or carve at table worth a pin, nor saddle a horse, nor carry a hawk, and fly her, nor hunt the dogs, nor lure a hawk, nor speak to a horse. In fine, my bodily qualities are very well suited to those of my soul, there is nothing spritely, only a full and firm vigor. I am patient enough of labor and pains, but it is only when I go voluntary to the work, and only so long as my own desire prompts me to it. (Of Presumption.)

My library, which is of the best sort of country libraries, is situated in a corner of my house; if anything comes into my head that I have a mind to look on or to write, lest I



should forget it in but going cross the court, I am fain to commit it to the memory of some other. If I venture in speaking to digress never so little from my subject, I am infallibly lost, which is the reason that I keep myself in discourse strictly close. I am forced to call the men that serve me either by the names of their offices, or their country; for names are very hard for me to remember. I can tell indeed that there are three syllables, that it has a harsh sound, and that it begins or ends with such a letter, but that's all: and if I should live long, I do not think but I should forget my own name, as some others have done. (Of Presumption.)

Montaigne was the apostle of nature, the champion of common sense, radical but conservative, a professed follower of the middle path yet able to rise above convention when it confined and restricted instead of protecting him. His attitude to ultimate truth was the scientific one. He was open to conviction; disinclined to hold anything incredible or impossible. Dowden says that "a fact was of value to him as a means of attaining a truth." What is more, he could follow a train of reasoning from circumstances by no means established as facts if any useful conclusion could thereby be arrived at, availing himself alike of the *a priori* and the *a posteriori* method. "Great abuse in the world is begot, or, to speak more boldly, all the abuses of the world are begot by our being taught to be afraid of professing our ignorance, and that we are bound to accept all things we are not able to refute." (Of Cripples.)

For the type of science and learning that desiccates the soul and makes complacent, conceited pedants he had no use but he was in himself an admirable exponent of the value of true culture.

His belief and unbelief were combined very much as they are in many a physician for whom a certain rationalism has been grafted by the character of his studies on a personality inclined to faith, a faith

built up rather than shattered by intimate acquaintance with much holy living and dying.

Like the physician, Montaigne lived ever with death. Not that he frequently observed the material phenomena of dissolution; but this inevitable and stupendous contingency, life's setting and background, was like the ravine on one side of a mountain road, not precluding enjoyment of the scenery but reminding one of the need to put one's feet down warily. But enough of these attempted and perhaps superficial parallelisms and analogies.

#### HEREDITY AND PHYSICAL CHARACTERISTICS

The purpose of this paper is to present together all the facts relating to Montaigne's physical life—his ancestry and offspring, his appearance and make-up, his marriage; to report some of the natural phenomena that interested him; to recite the story of his bodily afflictions and his struggle for health; to set forth his attitude to medicine and the grounds therefor.

Michel Eyquem de Montaigne was born on February 28, 1533, at the Château Montaigne, near the small town of Bergerac and the important city of Bordeaux, in Périgord. He made his appearance on the scene of life between eleven o'clock and noon, so he tells us, and thus was a departure from the rule since one's début in life's drama is commonly made at about the hour of sunrise. His father was a wealthy burgher, a wine merchant of good, middle class French stock with, perhaps, an admixture of British blood from the days of the Plantagenet ascendancy in Aquitaine. In earlier generations the family business had been fish rather than wine. His mother was Antoinette de Louppes, Lopes or Lopez, of Toulouse. She was of Jewish extraction, the family, originally of Villa Nova near Toledo, having been expelled from Spain (or Portugal). Her ancestors had been merchants or physicians. She and her parents adhered to the Huguenot



persuasion. Antoinette lived for seventy-three years after the marriage contracted with Peter Montaigne on his return from military service in Italy under Francis I. The heart he offered was whole, the body untainted by any physical impurity. Montaigne was the third child by this marriage but the eldest of those who lived to grow up.

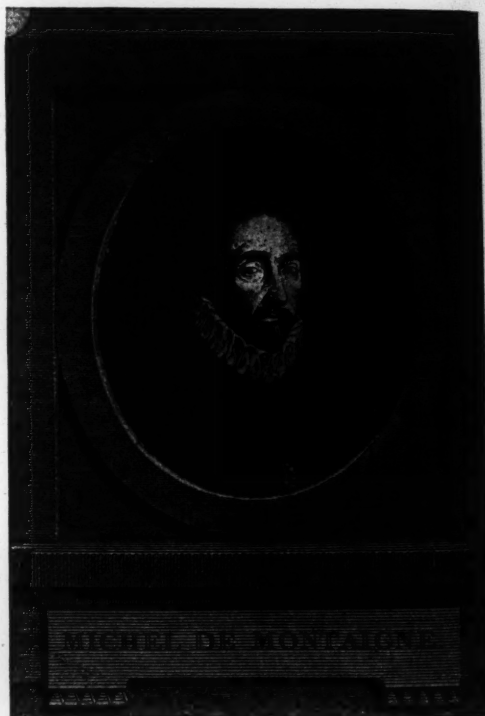
Montaigne adored his father and honored his memory to the last. He says of him:

His behavior was grave, humble and modest; he was very solicitous of neatness and decency both in his person and clothes, whether on horseback, or afoot; he was exceeding punctual of his word; and of a conscience and religion generally tending rather towards superstition than otherwise. For a man of little stature, very strong, well proportioned, and well knit, of a pleasing countenance inclining to brown, and very adroit in all noble exercises. I have yet in the house to be seen canes powr'd full of lead, with which, they say, he exercised his arms for throwing the bar, or the stone; and shoes with leaden soles to make him after lighter for running, or leaping. Of his vaulting he has left little miracles behind him: I have seen him, when past three-score, laugh at our exercises, and throw himself in his furred gown into the saddle, make the tour of a table upon his thumbs, and scarce ever mount the stairs into his chamber without taking three or four steps at a time: and swore he was a virgin at his marriage; and yet it was after a long practice of arms beyond the mountains; of which war he has left us a paper-journal under his own hand, wherein he has given a precise account from point to point of all passages both relating to the public and to himself. And was also married at a well advanced maturity in the year 1528, the three and thirtieth year of his age, upon his way home from Italy. (Of Drunkenness.)

He himself, though not lacking in health and vigor, was no match for his father who was good at every athletic exercise, knew no illness and took no medicine until he became, late in life, the victim of stone. "I hardly ever find anyone who cannot outdo me,

save in running, in the which I used to have a mediocre success... In dancing and tennis, in wrestling, I have never been able to acquire more than a very slight and ordinary efficiency; in swimming, fencing, vaulting, and jumping, none at all." (Of Presumption.)

Montaigne's rearing was peculiar. Corporal punishment was forbidden. Teaching



Portrait of Montaigne from an engraving by Augustin de Saint-Aubin.

(From "Montaigne, L'Homme et L'Oeuvre," by P. Bonnefon, Paris, 1893.)

was by influence not compulsion. Everything was to be simplicity, gentleness and kindness. Anything that might jar or shock the nervous system was ruled out. He was awakened by the sound of music, his father "being of opinion, it did trouble and disturb the brains of children suddenly to wake them in the morning, and to snatch them violently and over hastily from sleep, (wherein they are much more profoundly involved than we) he only caused me to

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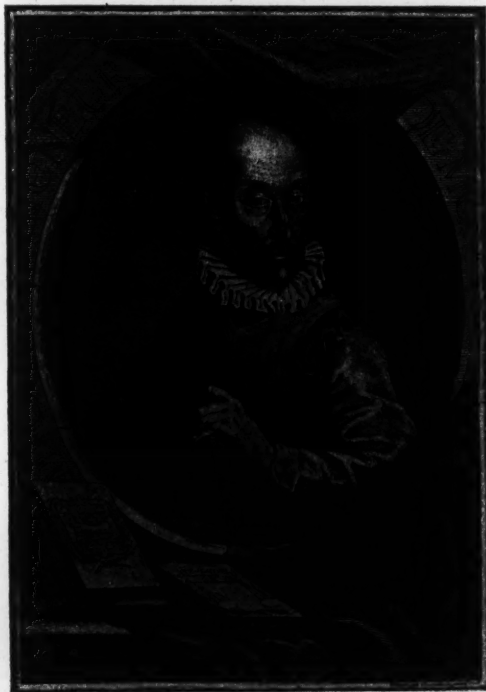
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be wakened by the sound of some musical instrument. . . . For, tho I was of a strong and healthful constitution, and of a disposition tolerably sweet and tractable; yet I was withal so heavy, idle, and indisposed that they could not rouse me from this stupidity to any exercise of recreation, nor get me out to play." (Education of Children.) He was brought up among peasants with a view to encouraging hardihood and fostering physical adaptability and was committed to teachers and companions who spoke Latin so that this might be his first, his natural language. One of his earliest tutors was a doctor of German descent "who since died a famous physician in France."

As a lad he was not overzealous in study. He says that he was rather lethargic, not so much in danger of doing wrong as of doing nothing. He was a dreamer out of touch with the practical issues of life, a disposition favored rather than corrected by a peculiar bringing up which with all its effort to be sedative and not stimulating did not prevent him from developing into a man of nerves; of a sensitive, susceptible temperament. He analyzed this condition when he said:

The very sight of another's pain does materially work upon me, and I naturally usurp the sense of a third person to share with him in his torment. A perpetual cough in another tickles my lungs and throat. I more unwillingly visit the sick I love, and am by duty interested to look after, than those I care not for, and from whom I have no expectation. I take possession of the disease I am concerned at and lay it too much to heart, and do not at all wonder that fancy should distribute fevers, and sometimes kill such as allow too much scope, and are too willing to entertain it. Simon Thomas was a great physician of his time. I remember, that happening one day at Toulouse to meet him at a rich old fellow's house, who was troubled with naughty lungs, and discoursing with his patient about the method of his cure; he told him, that one thing which would be very conducing to it, was to give me such occasion to be

pleased with his company, that I might come often to see him, by which means and by fixing his eyes upon the freshness of my complexion, and his imagination upon the sprightliness and vigour that glowed in my youth, and possessing all his senses with the flourishing age wherein I then was, his habit of body might peradventure be amended, but he forgot to say that mine at the same time might be made worse. (Force of the Imagination.)



Chereau's portrait of Montaigne.

(From "Montaigne, L'Homme et L'Oeuvre," by P. Bonnefon, Paris, 1893.)

He required periods of privacy and leisure for accomplishment as well as for comfort. "For my own part, I confess, I cannot forbear starting when the rattle of a harque-buse thunders in my ears on a sudden, and in a place where I am not to expect it, which I have also observed in others, braver fellows than I." (Of Constancy.) He was never good at games or manly exercises except those of running and riding. His passion for horses is amply proved by many sympathetic references to them and though

he professed no great skill as a horseman he rode much, both when sick and well. In his travels he noted everything that he ran upon connected with equitation.

I do not willingly alight when I am once on horseback; for it is the place where, whether well, or sick, I find myself most at ease. (Of Horses Dressed to the Menage, etc.)

I had taken a horse that went very easy upon his pace, but was not very strong. Being upon my return home, a sudden occasion falling out to make use of this horse in a kind of service that he was not acquainted with; one of my train, a lusty proper fellow, mounted upon a strong German horse, that had a very ill mouth, but was otherwise vigorous and unsoiled, to play the Bravo, and appear a better man than his fellows, comes thundering full speed in the very track where I was, rushing like a Colossus upon the little man, and the little horse, with such a career of strength and weight, that he turned us both over and over topsy turvy, with our heels in the air! So that there lay the horse overthrown and stunned with the fall, and I ten or twelve paces from him stretched out at length, with my face all battered and broken, my sword which I had in my hand, above ten paces beyond that, and my belt broke all to pieces, without motion or sense any more than a stock. 'Twas the only swoon I was ever in till this hour in my life. (Use makes Perfectness.)

A good rider does not so much mend my seat, as an awkward attorney, or a Venetian on horseback; and a clownish way of speaking does more reform mine, than the quaintest dialect. The ridiculous and simple look of another, does always advertise and advise me; that which pricks rouses and incites much better than that which tickles. (Of the Act of Conferring.)

I had rather be a good horseman than a good logician. . . . I can keep on horseback, as much tormented with the stone as I am, without alighting or being weary, eight or ten hours together. . . . My horses perform the better, for never any horse tired under me, that was able to hold out the first day's journey: I water them at every brook I meet, and have only a care they have so much way to go before I

come to my inn, as will warm the water in their bellies. . . . I feel death always twitching me by the throat, or by the back: but I am of another temper, 'tis in all places alike to me; yet, might I have my choice, I think I should rather choose to die on horseback than in a bed, out of my own house, and far enough from my own people. . . . I should choose to pass away the greatest part of my life on horseback. (Of Vanity.)

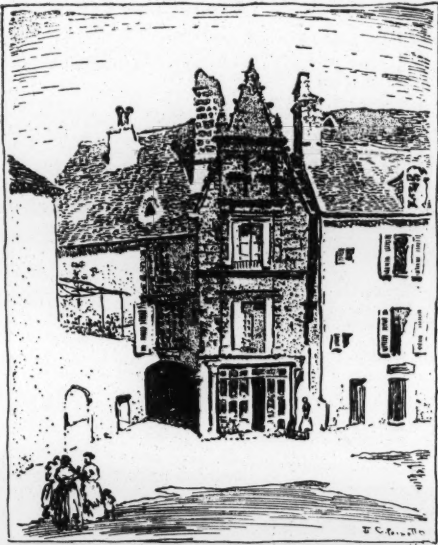
As horses that are led make several bounds and curvetts, but 'tis always at the length of the collar, and they still follow him that leads them. . . . Horses for the most part neighing, and swans singing when they die. (Of Physiognomy.)

It was always his habit, whether he purposed to halt on the road or not, to let his horses have oats to eat in the morning at the inn before starting. "After faring seven leagues, we all arrived fasting late at night at Stertzing." He thought the Swiss gave their horses too much to eat. On leaving Parma "we changed horses at every post and for 2 posts I made them go at full gallop so as to test the strength of my loins. I felt no ill effects or weariness therefrom." At Lyons he bought "three strong service horses, with fresh cut tails, for two hundred crowns, having purchased on the previous day of Malesieu a pacing horse for fifty crowns and another curtal nag for thirty-three." He thought it folly to bring good horses to Tuscany as the quality of hay was poor. The inhabitants unbridled and unsaddled their horses and let them drink all the water they wanted to when on the road!

As a young man he was fond of rich dress, ambitious, perhaps dissipated. The ambition never utterly died out though its nature and end changed with his growth. That he was dissipated is a possible deduction from some of those many frank statements which have to be taken with a grain of salt. "I have formerly loved cards and dice, but have long since left them off, only for this reason, that though I carry my losses as



handsomely as another, I was not well satisfied and quiet within." In the same way it may be concluded that he overtaxed and abused his health in youth. Probably in the reaction from the emotions aroused by La Boëtie's death—Montaigne was a passionate votary of friendship, and life gave him one and only one friend that satisfied every craving and developed every faculty—he deliberately sought distraction in the frivolities of his time though such



The house at Sarlat where Etienne de La Boëtie was born.  
(From "Through the French Provinces" by Ernest C. Peixotto, New York, 1909.)

pursuits were essentially foreign to his nature.

I have never put myself to great pains to curb the desires by the which I have found myself beset. My virtue is a virtue, or rather an innocence, which is purely random and accidental. By lucky chance I come of a race famous for its honour, and of an excellent father. I know not whether some part of his tastes have passed into me; or whether home example, and the good teaching I had in childhood, have helped me without my being aware; or else whether I was born thus, but, anyhow, I hold most vices in abhorrence. (Of Cruelty.)

#### MARRIAGE

Two years after La Boëtie's death Montaigne married Françoise de La Chassaigne, a woman of good, middle class family and respectable fortune. Françoise made him a good wife, the union fully meeting the husband's requirements. We have no way of knowing how satisfactory it was to his wife. Presumably it had all the disappointments usually accruing to the helpmate of a student and scholar. Montaigne was reasonably faithful. Françoise apparently discharged her full duty as wife and mother, proving the capable business partner which the Frenchman requires and demonstrating more than the usual capacity for administration since the essayist was without knowledge or capacity for farming, business, or the direction of an estate. Françoise, in addition, played the good Samaritan and Lady Bountiful for the rural neighborhood of the château and doubtless got some pleasure out of life in this rôle and by doctoring the sick, using the same medicine—one which she did not take herself—for fifty different maladies and always obtaining wonderful results.

Montaigne had the typical Gallic idea of marriage as an institution and perhaps something more:

For if one doth not always fulfill one's duty, at least one must always love it; and one must recognize the treachery of marrying without espousing one another. . . . Marriage hath for its share, usefulness, justice, honour, and constancy—a flat pleasure but a universal one. Love is founded upon delight alone, and giveth it, truly, of a kind more poignant, more care-sive, more vital. (On Some Verses of Virgil.)

A man doth not marry for himself, whatever people say; he marieth, quite as much, if not more, for his posterity and his family. The uses and interests of marriage concern our race, they reach far beyond ourselves. (Of Vanity.)

Marriage meaneth a kind of converse which easily cooleth through propinquity—a converse



which is harmed by assiduity. Every strange woman seemeth unto us a comely woman; and every man knoweth by experience that the continual sight of one another cannot give the pleasure which cometh of taking and leaving by fits and starts. As for me, these interruptions fill me with a fresh love towards my family, and restore me in pleasanter fashion to the groove of my home. And I know that kindliness hath arms long enough to stretch and join across from one corner of the world to another—more especially this married sort of kindliness, in the which there existeth a constant intercommunication of services which awaken obligation and remembrance. (Of Vanity.)

The fact that happy marriage is so rare is a sign of its value. When we fashion it finely and take it the right way, there is no nobler institution in society. (On Some Verses of Virgil.)

He was far from being a Lothario and yet by no means a truly domestic character. "And truly I was then drawn unto it more ill prepared and less tractable than I am at present after having made trial of it; and as libertine as I am taken to be, I have in truth more strictly observed the laws of wedlock than I either promised or hoped." He considered mutual respect and identity of interests the foundation of proper conjugal relations, but there is genuine tenderness and appreciation of her many good qualities in the letter of condolence addressed to his wife in relation to the loss of their first child. Montaigne's marriage and his attitude to love and women have been much discussed. He was not above nor beneath observing the conventions, proprieties and externals of a gentleman's position in the social arrangement. For the *marriage à la mode* in Hogarth's sense he had no use. The marriage after the good old French fashion he respected. It agreed with him. The union was marked by little romantic passion but by much respect and consideration on both sides. Six children were born to the couple, all girls, only one of whom attained adolescence. Montaigne's paternal affection

centered principally around the creations of his brain. If not a model of virtue, he certainly was above the bulk of his contemporaries in the matter of morals; but not so much through any ardent belief in the obligation to be pure as from a certain natural fastidiousness, clean instincts and a distaste for vice.

Montaigne maintained with great earnestness throughout his writings that it was untenable to think of soul and body as separate and independent entities and he indignantly denies that woman's love is the wholly spiritual thing that some pretend. His writings have some pointed allusions to the peculiarities of the fair, both maids and wives, but he may be regarded as an early recognizer, if not an apostle, of the doctrine of the equality of the sexes, holding that "apart from education and custom the difference is not great." He is constantly harping upon the indivisibility, the interdependence of the body and the soul.

Those do wrong who wish to disjoin our two great halves, and isolate them one from the other. They should, on the contrary, be joined and reunited. The soul must be commanded not to draw aside, to keep itself apart, to despise and desert the body—indeed, it cannot possibly do so excepting through some ill-shaped, apish trick. Rather should the soul strike fresh alliance with the body, embrace it, cherish it, control and counsel it, reestablish it and bring it back when it swerveth. In short, the soul should marry the body and serve it as a husband, to the end that their property should not appear to be different and contrary, but one and the same. (Of Presumption.)

That opinion which disdaineth our natural life is ridiculous, for, after all, our life is our being, our all. It is against Nature that we should despise ourselves and set ourselves not to care about ourselves. This is a peculiar malady. No other creature is known to hate and despise itself; and it is for a like vanity that we desire to be different from what we are. (The Custom of the Isle of Cea.)

'Tis not the soul, 'tis not a body that we are

training up, but a man, and we ought not to divide him. (Education of Children.)

For my part I must ingeniously declare, that the puff of every accident not only carries me along with it, according to its own proclivity, but that moreover I discompose, and trouble myself, by the instability of my own posture; and whoever will look narrowly into his own bosom, will hardly find himself twice in the same condition. I give my soul sometimes one face, and sometimes another, according to the side I turn her to. If I speak variously of myself, it is, because I consider myself variously. All contrarieties are there to be found, in one corner or another, or after one manner or another. Bashful, insolent, chaste, lustful, prating, silent, laborious, delicate, ingenious, heavy, melancholic, pleasant, lying, true, knowing, ignorant, liberal, covetous, and prodigal, I find all this in myself more or less according as I turn myself about; and whoever will sift himself to the bottom, will find in himself, even by his own judgment this volubility and discordance. In a word, I have nothing to say of myself entirely, simply, and solidly without mixture, and confusion. (Of the Inconstancy of Our Actions.)

To what end do we dismember by divorce, a building united by so mutual and brotherly a correspondence? Let us, on the contrary, repair and corroborate it by mutual offices, let the mind rouse and quicken the heaviness of the body, and the body stop and fix the levity of the soul. (Of Experience.)

The asceticism of the Middle Ages and of the early Church was abhorrent to him. He was too steeped in Latin and Greek lore, too much infected with the revival of respect for the human body that came with the Renaissance to tolerate the vilification of the body which passed for evidences of saintliness in anchorite and pilgrim.

'Tis always a soul, that by its faculty, reasons, remembers, comprehends, judges, desires, and exercises all its other operations by divers instruments of the body, as the pilot guides his ship according to his experience, one while straining or slacking the cordage, one while

hoisting the main-yard, or removing the rudder, by one and the same strength carrying on so many several effects: and that it is lodged in the brain, which appears in that the wounds and accidents that touch that part, do immediately offend the faculties of the soul. (The Apology.)

His study of humanity and his reverence for nature convinced him of the oneness of man. His admiring disciple Mlle. de Gournay had caught the spirit of her master when she wrote this aphorism. "To the common herd the soul is only useful as salt is useful to a hog—to keep it from corruption."

#### PERSONAL TRAITS AND HABITS

A strange and unusual characteristic of his youth was the very frequent thought of death and this, the natural accompaniment of middle age, became an ever-deepening shadow with the advent of sickness and invalidism. Montaigne did not fight against this inclination to ponder on dissolution as a morbid and perhaps dangerous one and when suffering and disease made death an ever-lurking presence at his elbow he entertained it and looked it squarely in the face.

There is nothing which I have more constantly entertained myself withal than imaginations of death, even in the most wanton season of my age. (That Men Are not to Judge of Our Happiness till after Death.) In the company of ladies, and in the height of mirth, some have perhaps thought me possessed with some jealousy, or meditating upon the uncertainty of some imagined hope, while I was entertaining myself with the remembrance of someone surprised a few days before with a burning fever of which he died returning from an entertainment like this with his head full of idle fancies of love and jollity, as mine was then, and that for ought I knew the same destiny was attending me. (Study of Philosophy is to Learn to Die.)

Later we shall quote him more extensively in this connection for it is here that his philosophy reaches its fastigium of grandeur and beauty.

There is a tinge of real regret in his comments on his height for he was below the average. Montaigne deemed dignity of stature an essential of manly beauty.

My height is rather below the average. This defect hath not only the drawback of ugliness, but, in addition, that of inconvenience. A beautiful figure, in truth, is the only beauty allowed to men. For the rest, my figure is strong and well set, my face not fat but full, my complexion—between the jovial and the melancholy—showeth moderately sanguine and of tempered heat. For my health, it is steady and gay. . . . Now I am of something lower than the middle stature, a defect that not only borders upon deformity, but carries withal a great deal of inconvenience along with it, especially those who are in command; for the authority which a graceful presence, and a majestic mien beget, is wanting. . . . The other beauties belong to women, the beauty of stature is the only beauty of men. Where there is a contemptible stature, neither the largeness and roundness of the forehead nor the whiteness and sweetness of the eyes, nor the moderate proportion of the nose, nor the littleness of the ears and mouth, nor the evenness and whiteness of the teeth, nor the thickness of a well-set brown beard, shining like the husk of a chestnut, nor curled hair, nor the just proportion of the head, nor a fresh complexion, nor a pleasing air of a face, nor a body without any offensive scent, nor the just proportion of limbs, can make a handsome man. I am, as to the rest, strong, and well knit, my face is not puffed, but full, and my complexion betwixt jovial and melancholic, moderately sanguine and hot. (Of Presumption.)

His garments were usually either white or black and in walking or riding he carried a cane. He set forth on his journeying with a coat of no fashion trimmed with rough hair, and provided with two caps. His nether garments he did not vary with the season. Of his personal habits and tastes he writes freely and fully. He was absent-minded and forgetful, indeed his memory was the poorest imaginable. He slept nine hours a day,

but had no siesta. Two meals sufficed him and he preferred them simple. He had a keen relish for fish, a real weakness for crawfish on which he fed every day for the first two hundred leagues of his foreign travels; but none were set before him at Rovere and that circumstance, or the equanimity with which Montaigne endured the omission, astonished his scribe.

Long sittings at meat both trouble me, and do me harm; for, be it for want of better countenance, or that I have accustomed myself to it from a child, I eat all the while I sit. Therefore it is, that at my own house, though the meals there are of the shortest, I usually sit down a little while after the rest. . . . They whose concern it is to have a care of me, may very easily hinder me from eating anything they think will do me harm; for in such things I never covet nor miss anything I do not see: but withal, if it once comes in my sight, 'tis in vain to persuade me to forbear, so that when I design to fast, I must be parted from those that eat suppers, and must have only so much given me, as is required for a regular collation; for if I sit down to table, I forget my resolution. When I order my cook to alter the manner of dressing any dish of meat, all my family know what it means, that my stomach is out of order, and that I shall scarce touch it; I love to have all meats that will endure it very little boiled or roasted, and love them mightily mortified, and even to stinking in many. Nothing but hardness generally offends me; of any other quality I am as patient and indifferent as any man I have known; so that contrary to the common humor, even in fish, it often happens, that I find them both too fresh and too firm: not for want of teeth, which I ever had good, even to excellence, and that age does but now begin to threaten at this time of my life. I have ever been used every morning to rub them with a napkin, and before and after dinner. God is favorable to those whom he makes to die by degrees; 'tis the only benefit of old age; the last death will be so much the less painful; it will kill but a quarter of a man; or but half a one at most. I have one tooth lately fallen out without drawing, and without pain; it

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was the natural term of its duration. . . Eating too much hurts me, but for the quality of what I eat, I do not yet certainly know that any sort of meat disagrees with my stomach; neither have I observed that either full-moon or decrease, spring or autumn, are hurtful to me. We have in us motions that are inconstant, and for which no reason can be given. For example, I found radishes first grateful to my stomach, since that nauseous, and now at present grateful again. In several other things likewise, I find my stomach and appetite to vary after the same manner. I have changed and changed again from white to claret, from claret to white. I am a great lover of fish, and consequently make my fasts feasts, and my feasts fasts; and believe what some people say, that it is more easy of digestion than flesh. . . I never keep my legs and thighs warmer in winter than in summer, one single pair of silk stockings is all: I have suffered myself for the relief of my rheumatism to keep my head warmer, and my belly upon the account of my colic: my diseases in a few days habituated themselves, and disdained my ordinary provisions. I was presently got from a single cap to a napkin, and from a napkin to a quilted cap. The belly-pieces of my doublet serve only for decency, they signify nothing, if I do not add a hare's skin or a stomacher, and wear a gallot upon my head. . . I am not very apt to be thirsty, either well or sick, my mouth is indeed apt to be dry, but without thirst; and commonly I never drink but with thirst that is created by eating, and then I drink as hard as any. I drink pretty well for a man of my pitch: in summer, and at a hungry meal, I do not only exceed the limits of Augustus, that drank but thrice precisely; but not to offend Democritus his rule, who forbade that men should stop at four times, as an unlucky number; I proceed for need to the fifth glass, about three half pints. For the little glasses are my favorites; and I take a delight to drink them off, which other people avoid as an indecent thing. I mix my wine sometimes with half, sometimes the third part water; and when I am at home, by an ancient custom that my father's physician prescribed both to him and himself, they mix that which is designed for me in the buttery three or four hours before 'tis

brought in. . . I fear a fog, and fly from smoke, as from the plague. . . and amongst the difficulties of war, reckon the choking dust they make us ride in a whole day together. I have a free and easy respiration, and my colds for the most part go off without offense to the lungs, and without a cough. The heat of summer is more an enemy to me than the cold of winter. (Of Experience.)

Melon was his preferred fruit. He wanted his bread unsalted but was fond of salt meats and likewise of sauces. A variety of dishes he abominated. He ate with his fingers, in a nervous haste that often made him bite fingers, tongue and lips. This was not gluttony. With his usual calm indifference to the effect of his revelations upon the reader he tells us in this connection that there were men in Rome who taught graceful mastication just as graceful carriage in walking is taught. This is to admit that he presented a sorry picture at table and that he did not greatly care.

Eating rather bored him save in pleasant company. The numerous allusions to food are made by a man who makes no pretense, has nothing to hide, reckons not of critics and who from the time he began to write had increasingly to consider what he ate on account of his health. A tester and bed curtains were essential to his comfort and he heartily approved of German stoves and of a warm bedroom, being in mortal dread of chilling by the night air or that of the early morning.

A German made me very merry at Augusta ("Augsburg") with disputing the inconvenience of our hearths by the same arguments which we commonly make use of in decrying their stoves: for, to say the truth, that smothered heat, and then the scent of that heated matter of which the fire is composed, very much offend such as are not used to them, not me; but as to the rest, the heat being always equal, constant and universal, without flame, without smoke, and without the wind that comes down our chimneys, they may many ways endure comparison

with ours. Why do we not imitate the Roman architecture? For, they say, that anciently fires were not made in their houses, but on the outside, and at the foot of them, from whence the heat was conveyed to the whole fabric by pipes contrived in the wall, which were drawn twining about the rooms that were to be warmed: which I have seen plainly described somewhere in Seneca. (Of Experience.)

But he required no warming pan and preferred a hard bed. He was no Sybarite.

No season is enemy to me, but the parching heat of a scorching sun; for the umbrellas made use of in Italy, ever since the time of the ancient Romans, more burden a man's arm than they relieve his head. . . . I love rain, and to dabble in the dirt, as well as tame ducks do; the change of air and climate never concern me: every sky is alike. I am only troubled with inward alterations, which I breed within myself, and those are not so frequent in travel. . . . I have learned to travel after the Spanish fashion, and to make but one stage of a great many miles; and in excessive heats, I always travel by night, from sunset to sunrising. The other method of baiting by the way, in haste and hurry to gobble up a dinner, is especially in short days, very inconvenient. (Of Vanity.)

Prior to the advent of his lithemia we may conceive him to have possessed a rugged constitution, full of nervous energy. Slenderly built but energetic, of that resistant type familiarly designated "tough as whit-leather," sickness never weakened his will and but little hampered him in the execution of it. The same nicety of taste which made him lead a clean life, utterly independent of conscientious or religious scruples, made him careful of his person. He had a real physical modesty but was not foolish, and heaps ridicule on Cyrus and Maximilian for their extreme unwillingness to uncover the person. If he ate with his fingers he made full use of a napkin, delighted to have one after each course. He could not be comfortable unless he washed on rising. He cleaned his teeth twice a day

with a napkin. He appears to have been hypermetropic. "My sight, is perfect, entire, and discovers at a very great distance, but is soon weary, which makes me that I cannot read long, but am forced to have one to read to me." (Of Presumption.) "I am to this hour ignorant of the use of spectacles, and can see as far as ever I did, or any other. 'Tis true, that in the evening I begin to find a little trouble and weakness in my sight, if I read; an exercise that I have always found troublesome, especially by night." (Of Experience.)

Occasionally Montaigne fasted not as an act of religious observance but for the physical benefit he experienced from it. "Repletion hath in my case a cruelly sluggish effect on activity." He liked to rest after meals and to listen to but not engage in talk. Before meals he found it wholesome and pleasant to wax even vociferous. He stood straight and held his head high; his step was firm, his gestures lively. His voice was of pleasing timbre. Compared to his father he confesses himself awkward. Thus in doffing his hat to a passing acquaintance in Rome he struck himself in the eye and was incommoded by the accident for several days. The recital of this incident is typical of Montaigne. It has been said that "Tom Jones" is the only faithful portrait of a man to be found in fiction. In his description of himself Montaigne gives us a picture of a real character drawn with pitiless lack of reserve. In conversation he was voluble, imperious.

He was fond of hunting though soft-hearted as regards the game.

I carry my feeling to such a degree of softness that I cannot see the neck of a fowl wrung without displeasure, and cannot bear to hear the wail of a hare caught by my hounds, although riding to the chase is one of my excessive pleasures. (Of Cruelty.)

He played with his cat and must have been rather fond of animals. He says of them.

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Considering that the same Master hath given us lodging in this palace for his service, and that they belong, like us, to his family, nature hath good reason to enjoin upon us some kind of esteem and affection towards them. Indeed, when all is said, there existeth a common human duty, a certain respect the which attacheth us not only to the beasts who have life and sentiment, but even to the trees and plants. We owe justice to men, and grace and benignity to the other creatures, who are not capable of justice. There is a sort of intercourse between them and us, and a sort of mutual obligation. (Of Cruelty.)

In how many several sorts of ways do we speak to our dogs and they answer us. (The Apology.)

Movement and activity of body were curiously blended with a certain sluggishness. "I move with difficulty and am dilatory in all things: in getting up, in going to bed, at my meals. Seven o'clock is early for me, and where I am master I never dine before eleven, or sup till after six." (Of Presumption.) "My feet are so unsteady, so unsure, so ready to totter and to feel the earth crumble beneath them—my eyesight is so ill-regulated—that when I fast, I am another man than he who hath eaten a repast." (The Apology.) He could not keep his feet still but in his study he liked to perch them high in front of him. He got great comfort from scratching his head to provoke thought and regarded scratching generally as one of the little physical luxuries of life. "I do not remember that I ever had the itch, and yet scratching is one of nature's sweetest gratifications, and nearest at hand, but the smart follows too near. I use it most in my ears, which are often apt to itch. I came into the world with all my senses entire, even to perfection. My stomach is commodiously good, as also is my head and my breath; and for the most part, uphold themselves so in the height of fevers." (Of Experience.)

Montaigne's health became seriously impaired after he had been in retreat in his

tower, devoted to study, reflection and writing for about six and a half years. His withdrawal to this sanctum in the first instance was doubtless induced in part by considerations of health.

Every man should have a back-shop all his own . . . in which he can establish his liberty, his chief refuge, his best solitude. And here it is that he must hold his ordinary intercourse with himself. (Of Solitude.)

Miserable, to my way of thinking, is he who hath no place where he can be at home to himself, where he can privily court himself: where he can hide himself. To me it is much more bearable to be always alone than never. (Of Three Commerces.)

His beloved refuge, that famous temple of the soul but for which the world of letters and the world of thought would have been infinitely the poorer, had on the ground floor a chapel. Mass said there could be heard by the lord of the domain lying comfortably in bed above. The second story contained the library and a communicating chamber, cozy and warm. The regular bedroom was on the third story. The walls of the library were decorated with musical instruments, pictures, inscriptions. On the rafters were favorite sayings from Homer, Horace, Plato, Pliny, St. Paul, Terence, Ecclesiastes, the Psalms, etc. The books of which the owner was justly proud, numbered a thousand, a goodly and unusual collection for citizen or king. Of these thousand volumes but seventy-six have been positively identified. Someone, by accident, picked up in a second hand shop in Paris his copy of Caesar's Commentaries with over six hundred annotations in the essayist's own hand. We know that he had a Greek Bible, Münster's Cosmography, (a sort of guide book to Europe), four works on theology—two of them heterodox—and five volumes on law and medicine respectively. In his retirement Montaigne turned to books. He could not play the gentleman farmer and cared nothing for the breeding of cattle nor did the country charm





is particularly feared in this disease, does not so much trouble me. And if, being alone, I should have taken it, it had been a more sprightly and a longer flight. 'Tis a kind of death, that I do not think of the worst sort; 'tis usually short, stupid, without pain, and consoled by the public condition; without ceremony, without mourning, and without a crowd. But as to the people about us, the hundredth part of them could not be saved. (Of Physiognomy.)

AN OBSERVER AND RECORDER OF  
NATURAL PHENOMENA

In his minute and full rehearsal of all the symptoms of La Boétie's last illness, in his account of how, during those sad hours of waiting, they conversed together about what the ancient physicians said of the malady, Montaigne showed himself such a keen observer and recorder of the phenomena of disease that one is strengthened in the feeling, derived from many manifestations of his mind and heart, that had he lived today he would have been ideally fitted to practice medicine.

What man of scientific training could write a more accurate and succinct report of a case than the following?

Two days ago I saw a child, that two men and a nurse, who said themselves to be the father, the uncle, and the aunt of it, carried about to get money by showing it, by reason it was so strange a creature. It was, as to all the rest, of a common form, and could stand upon its feet, could go and gabble much like other children of the same age; it had never as yet taken any other nourishment but from the nurse's breasts, and what, in my presence, they tried to put into the mouth of it, it only chewed a little, and spit it out again without swallowing; the cry of it seemed indeed a little odd and particular, and it was just fourteen months old. Under the breast it was joined to another child, but without a head, and that had the spine of the back without motion, the rest entire; for though it had one arm shorter than the other, it had been broken by accident at their birth; they were joined breast to breast, and as if a lesser child would reach the arms about the

neck of one something bigger. The juncture and thickness of the place where they were conjoined, was not above four fingers, or thereabouts, so that if you thrust up the imperfect child, you may see the navel of the other below it, and the joining was betwixt the paps and the navel. The navel of the imperfect child could not be seen, but all the rest of the belly; so that all the rest that was not joined of the imperfect one, as arms, buttocks, thighs, and legs, hung dangling upon the other, and might reach to the midleg. The nurse moreover told us that it urined at both bodies, and also the members of the other were nourished, sensibly, and in the same plight with that she gave suck to, excepting that they were shorter, and less. (Of a Monstrous Child.)

He sounds like a doctor when he says:

It is probable that the chief credit of miracles, of visions, and spells, and such abnormal effects, hath its source in the power of imagination, acting principally upon the minds of the vulgar, the which are softer than others. Their belief has been so strongly got hold of, that they think they see what they do not see. (Of the Force of Imagination.)

He realizes the power of the imagination even to kill.

A woman fancying she had swallowed a piece of braed, cried out of an intolerable pain in her throat, where she thought she felt it stick: but an ingenious fellow that was brought to her, seeing no outward tumor nor alteration, supposing it only to be conceit taken at some crust of bread that had hurt her as it went down, caused her to vomit, and cunningly, unseen, threw a crooked pin into the basin, which the woman no sooner saw, but believing she had cast it up, she presently found herself eased of her pain. I myself knew a gentleman, who having treated a great deal of good company at his house, three or four days after bragged in jest (for there was no such thing) that he had made them eat of a baked cat; at which, a young gentlewoman, who had been at the feast, took such a horror, that falling into a violent vomiting and a fever, there was no possible means to save her. Even brute beasts are also subject to the force of imagination

as well as we; as is seen by dogs, who die of grief for the loss of their masters, and are seen to quest, tremble, and start, as horses will kick and whinny in their sleep. Now all this may be attributed to the affinity and relation betwixt the souls and bodies of brutes, but 'tis quite another thing when the imagination works upon the souls of rational men, and not only to the prejudice of their own particular bodies, but of others also. (Of the Force of Imagination.)

He had the physician's contempt for lack of self-control and notes oddities of behavior due to it, to subtle physical instincts or to high-strung nerves.

Who would be astonished at so strange a constitution as that of Demophon, steward to Alexander the Great, who sweat in the shade, and shivered in the sun? I have seen those who have run from the smell of a mellow apple with greater precipitation than from a harquebuse shot; others run away from a mouse, others vomit at the sight of cream; others ready to swoon at the sight of a cat, as Germanicus, who could neither endure the sight nor the crowing of a cock. I will not deny, but that there may peradventure be some occult cause and natural aversion in these cases; but certainly a man might conquer it, if he took it in time. Precept has in this wrought so effectually upon me, though not without some endeavor on my part. Young bodies are supple, one should therefore in that age bend and ply them to all fashions and customs. (Education of Children.)

Smiths, millers, pewterers, forgers, and armorers, could never be able to live in the perpetual noise of their own trades, did it strike their ears with the same violence that it does ours. My perfumed doublet gratifies my own smelling at first, as well as that of others; but after I have worn it three or four days together, I no more perceive it, but it is yet more strange, that custom, notwithstanding the long intermissions and intervals, should yet have the power to unite, and establish the effect of its impressions upon our senses, as is manifest in such as live near unto steeples, and the frequent noise of the bells. I myself lie at home in a tower, where every morning and evening a

very great bell rings out the Ave Maria, the noise of which shakes my very tower, and at first seemed insupportable to me; but having now a good while kept that lodging, I am so used to it that I hear it without any manner of offense, and often without awaking at it. (Of Custom.)

I saw the other day, at my own house, a little fellow who came to show himself for money, a native of Nantes born without arms, who has so well taught his feet to perform the services his hands should have done him, that indeed they have half forgot their natural office, and the use for which they were designed; the fellow too calls them his hands, and we may allow him so to do, for with them he cuts anything, charges and discharges a pistol, threads a needle, sows, writes, and puts off his hat, combs his head, plays at cards and dice, and all this with as much dexterity as any other could do who had more, and more proper limbs to assist him; and the money I gave him he carried away in his foot, as we do in our hand. (Of Custom.)

Physicians hold, that there are certain complexions that are agitated by the same sounds and instruments, even to fury. I have seen some, who could not hear a bone gnawed under the table without impatience; and there is scarce any man, who is not disturbed at the sharp and shrill noise that the file makes in grating upon the iron; as also to hear chewing near them, or to hear any one speak, who has an impediment in the throat or nose, will move some people even to anger and hatred. (The Apology.)

On the other hand the spirit reacts on the body:

To a discontented and afflicted man, the light of the day seems dark and overcast. Our senses are not only depraved, but very often stupefied by the passions of the soul. How many things do we see, that we do not take notice of, if the mind be taken up with other thoughts? . . . It appears that the soul retires within, and amuses the power of the senses. And so both the inside, and the outside of man is full of infirmities and mistakes. They who have compared our lives to a dream, were peradventure more in the right than they



were aware of; when we dream, the soul lives, works, and exercises all its faculties, neither more nor less, than when awake; but more largely and obscurely; yet not so much neither, that the difference should be as great as betwixt night and the meridional brightness of the sun, but as betwixt night and shade; there she sleeps, here she slumbers; but whether more or less, 'tis still dark and Cymmerian darkness. We wake sleeping, and sleep waking. I do not see so clearly in my sleep; but as to my being awake, I never found it clear enough, and free from clouds. Moreover, sleep, when it is profound, sometimes rocks even dreams themselves asleep, but our awaking is never so spritely, that it does rightly, and as it should, purge and dissipate those ravings and whimsies, which are waking dreams, and worse than dreams. Our reason and soul receiving those fancies and opinions that like come in dreams, and authorizing the actions of our dreams, with the approbation that they do those of the day; wherefore do we not doubt, whether our thought and action is another sort of dreaming, and our waking a certain kind of sleep? (The Apology.)

In his graphic description, too long for citation here, of a severe fall from his horse that caused him to vomit blood and be out of his senses, he carefully analyzes everything; automatic and involuntary movements; the distinction between molecular and somatic death; partial return to consciousness with its vague, delightful unreality; instinctive acts; the existence of a subconscious ego. From the memory of the episode he argues that death, to which he had come near, may be very far from the horrible experience to the victim of it that the alarmed and sorrowing witnesses imagine.

My stomach was so oppressed with the coagulated blood, that my hands moved to that part of their own voluntary motion, as they frequently do to the part that itches, without being directed by our will. There are several animals and even men, in whom one may perceive the muscles to stir and tremble after they are dead. Having been by the way, and

two long hours after, given over for a dead man, I began to move and to fetch my breath; for so great abundance of blood was falling into my stomach, that nature had need to rouse her forces to discharge it. They then raised me upon my feet, where I threw off a great quantity of pure florid blood, as I had also done several times by the way, which gave me so much ease, that I began to recover a little life, but so leisurely and by so small advances, that my first sentiments were much nearer the approaches of death than life. The remembrance of this accident, which is very well imprinted in my memory, so naturally representing to me the image and idea of death, has in some sort reconciled me to that untoward accident. When I first began to open my eyes after my trance, it was with so perplexed, so weak and dead a sight, that I could yet distinguish nothing, and could only discern the light. As to the functions of the soul, they advanced with the same pace and measure with those of the body. I saw myself all bloody, my doublet being stained and spotted all over with the blood I had vomited; and the first thought that came into my mind, was, that I had a harquebuse shot in my head; and indeed at the same time, there were a great many fired round about us. Methought, my life but just hung upon my lips, and I shut my eyes, to help, methought, to thrust it out; and took a pleasure in languishing and letting myself go. It was an imagination that only superficially floated upon my soul, as tender and weak as all the rest, but really, not only exempt from pain, but mixed with that sweetness and pleasure that people are sensible of, when they indulge themselves to drop into a slumber. I believe it is the very same condition those people are in, whom we see to swoon with weakness, in the agony of death, and am of opinion that we lament them without cause, supposing them agitated with grievous dolours, or that their souls suffer under painful thoughts. . . . So it happens that in the yawning of sleep, before it has fully possessed us to perceive, as in a dream, what is done about us, and to follow the last things are said with a perplexed and uncertain hearing, which seem but to touch upon the borders of the soul; and make answers to the last words have been spoken to

us, which have more in them of fortune than sense. Now seeing I have effectually tried it, I make no doubt but I have hitherto made a right judgment. For first being in a swoon, I labored with both hands to rip open the buttons of my doublet, (for I was without arms) and yet I felt nothing in my imagination that hurt me; for we have many motions in us, that do not proceed from our direction. . . . As I drew near my own house, where the alarm of my fall was already got before me, and that my family were come out to meet me, with the hubbub usual in such cases; I did not only make some little answer to some questions were asked me, but they moreover tell me, that I had so much sense about me as to order them to give a horse to my wife, who, I saw, was toiling and laboring along the road, which was a steep and uneasy one.<sup>1</sup> This consideration should seem to proceed from a soul, that retained its functions, but it was nothing so with me. I knew not what I said or did, and they were nothing but idle thoughts in the clouds, that were stirred up by the senses of the eyes and ears, and proceeded not from me. I knew not for all that, or whence I came, or whither I went, neither was I capable to weigh and consider, what was said to me: these were light effects, that the senses produced of themselves, as of custom; what the soul contributed was in a dream, as being lightly touched, licked and bedewed by the soft impression of the senses. Notwithstanding, my condition was in truth very easy and quiet, I had no afflictions upon me, either for others or myself. It was an extreme drooping and weakness without any manner of pain. I saw my own house, but knew it not. When they had put me to bed, I found an inexpressible sweetness in that repose; for I had been damnably tugged and lugged by those poor people, who had taken the pains to carry me upon their arms a very great and a very ill way, and had in so doing all quite tired out themselves twice or thrice one after another. They offered me several remedies but I would take none, certainly believing that I was mortally wounded in the head. And in earnest, it had been a very happy death, for the weakness of my understanding, deprived me of the

faculty of discerning, and that of my body from the sense of feeling. I suffered myself to glide away so sweetly, and after so soft and easy a manner, that I scarce find any other action less troublesome than that was. This long story, of so light an accident, would appear vain enough, were it not for the knowledge I have gained by it for my own use; for I do really find, that to be acquainted with death, is no more but nearly to approach it. (Use Makes Perfectness.)

Such as have been acquainted with these faintings, proceeding from weakness, do say that they are therein sensible of no manner of pain, but rather feel a kind of delight, as in a passage to sleep and rest. These are studied and digested deaths. (Of Judgment of the Death of Another.)

#### THE INTERPRETATION OF THE SENSES

He goes deeply into the question of the senses, affirming that we cannot deny the evidences they adduce of the reality of externals.

The senses are our proper and first judges, which perceive not things but by external accidents. (Of the Act of Conferring.)

There can be nothing absurd to a greater degree, than to maintain that fire does not warm, that light does not shine, and, that there is no weight nor solidity in iron, which are advertisements conveyed to us by the senses; neither is there belief nor knowledge in man, that can be compared to that for certainty. The first consideration I have upon the subject of the senses is, that I make a doubt whether or no man be furnished with all natural senses. I see several animals who live an entire and perfect life, some without sight, others without hearing: who knows whether to us also, one, two, or three, or many other senses may not be wanting? For if any one be wanting, our examination cannot discover the defect. 'Tis the privilege of the senses to be the utmost limit of our discovery: there is nothing beyond them that can assist us in exploration, not so much as one sense in the discovery of another. . . . It is impossible to make a man naturally blind, conceive that he does not see, impossible to make him desire sight, or to be sensible of his defect. (The Apology.)

<sup>1</sup> Cotton's translation as properly corrected by Hazlitt.

He raises the question whether animals may not be possessed of senses we lack.

What do we know but that the difficulties which we find in several effects of animals which exceed our capacity, are not produced by faculty of some sense that we are defective in? And whether some of them have not by this means a life more full and entire than ours? We seize an apple as it were with all our senses: we there find redness, smoothness, odor, and sweetness? But it may have other virtues besides these, as to heat, or bind, which no sense of ours can have any reference unto. Is it not likely that there are sensitive faculties in nature that are fit to judge of, and to discern those which we call the occult properties in several things, as for the loadstone to attract iron; and that the want of such faculties is the cause that we are ignorant of the true essence of such things? 'Tis peradventure some particular sense that gives cocks to understand what hour it is of midnight, and when it grows to be towards day, and that makes them to crow accordingly; that teaches chickens, before they have any experience of what they are, to fear a spar-hawk, and not a goose, or a peacock, though birds of a much larger size; that cautions them of the hostile quality the cat has against them, and makes them not to fear a dog? To arm themselves against the mewing (a kind of flattering voice) of the one, and not against the barking, a shrill and threatening voice of the other. That teaches wasps, ants, and rats, to fall upon the best pear, and the best cheese, before they have tasted them, and inspires the stag, elephant, and serpents, with the knowledge of a certain herb proper for their cure. There is no sense that has not a mighty dominion, and that does not by its power introduce an infinite number of knowledges. If we were defective in the intelligence of sounds of music, and of the voice, it would cause an unimaginable confusion in all the rest of our science. For, besides what appertains to the proper effect of every sense, how many arguments, consequences, and conclusions do we draw to other things, by comparing one sense with another? Let an understanding man imagine human nature originally produced without the sense of seeing, and consider what ignorance

and trouble such a defect would bring upon him, what a darkness and blindness in the soul; he will then see by that, of how great importance to the knowledge of truth, the privation of such another sense, or of two or three, should we be so deprived, would be. We have formed a truth by the consultation and concurrence of our five senses, but peradventure, we should have the consent and contribution of eight or ten, to make a certain discovery of our own being. The sects that controvert the knowledge of man, do it principally by the uncertainty and weakness of our senses. For since all knowledge is by their means and mediation conveyed unto us, if they fail in their report, if they corrupt, or alter what they bring us from without, if the light which by them creeps into the soul be obscured in the passage, we have nothing else to hold by. (The Apology.)

Despite his fear of the doctors he would have made a poor Christian Scientist.

Like a musket-bullet, under the forefinger, the middle finger being lapped over it, which feels so like two, that a man will have much ado to persuade himself there is but one; the end of the two fingers feeling each of them one at the same time. For that the senses are very often masters of our reason, and constrain it to receive impressions which it judges and knows to be false, is frequently seen. I set aside the sense of feeling, that has its functions nearer, more lively and substantial; that so often by the effect of the pains it helps the body to subvert and overthrows all those fine stoical resolutions, and compels him to cry out of his belly, who has resolutely established this doctrine in his soul, that the colic, and all other pains and diseases are indifferent things; not having the power to abate anything of the sovereign felicity, wherein the wise man is seated by his virtue. (The Apology.)

Objective realities exist. There are qualities inherent in matter whether we perceive them or not.

For, it is not said, that the essence of things have a relation to man only; hardness, whiteness, depth and sharpness, have reference to the service and knowledge of animals as well



as to us; and nature has equally designed them for their use. When we press down the eye, the body that we look upon, we perceive to be longer, and more extended; many beasts have their eyes so pressed down: this length therefore is peradventure the true form of that body, and not that which our eyes give it in the usual state. If we close the lower part of the eye, things appear double to us. If our ears be hindered, or the passage stopped with anything, we receive the sound quite otherwise, than we usually do; the animals likewise, who have either the ears hairy, or but a very little hole instead of an ear, do not consequently hear as we do; but another kind of sound. We see at festivals and theaters, the opposing a painted glass of a certain color to the light of the flambeaus, all things in the room appear to us green, yellow or violet. . . . 'Tis likely that the eyes of animals, which we see to be of divers colors, do produce the appearance of bodies the same with their eyes. We should therefore, to make a right judgment of the operations of the senses, be first agreed with beasts, and secondly, amongst ourselves, which we by no means are, but enter at every turn into dispute; forasmuch as one hears, sees, or tastes something otherwise than another does, and contests as much as upon any other thing, of the diversity of the images that the senses represent to us. A child, by the ordinary rule of nature, hears, sees and tastes otherwise than a man of thirty years old, and he, than one of three-score. The senses are in some more obscure and dusky, and more open and quick in others; and we receive things variously according as we are, and accordingly as they appear to us. Now our perception being so uncertain and contraverted, it is no more a wonder if we are told that we may declare that snow appears white to us, but that to affirm that it is in its own essence really so, is more than we are able to justify: and this foundation being shaken, all the knowledge in the world must of necessity fall to ruin. What, do our senses themselves hinder one another? A picture seems raised and embossed to the sight, in the handling it seems flat to the touch: shall we say that musk, which delights the smell, and is offensive to the taste, is agreeable or no? There are herbs and unguents,

proper for one part of the body, that are hurtful to another: honey is pleasant to the taste, but offensive to the sight. As we see in the bread we eat, it is nothing but bread, but by being eaten, it becomes bones, blood, flesh, hair and nails. . . . The humidity sucked up by the root of a tree becomes trunk, leaf and fruit; and the air being but one, is modulated in a trumpet to a thousand sorts of sounds. Are they our senses; I would fain know, that in like manner form these subjects into so many divers qualities, or have they them really such in themselves? And upon this doubt, what can we determine of their true essence? Moreover, since the accidents of diseases, of raving, or sleep, make things appear otherwise to us than they do to the healthful, the wise, and those that are awake; is it not likely, that our right posture of health and understanding, and our natural humours, have also wherewith to give a being to things that have relation to their own condition, and accommodate them to themselves, as well as when they are disordered; and our health as capable of giving them an aspect as sickness? Why has not the temperate a certain form of objects relative to it as well as the intemperate: and why may it not as well stamp it with its own character as the other? He whose mouth is out of taste, says the wine is flat, the healthful man commends its flavor, and the thirsty its briskness. Now our condition always accommodating things to itself, and transforming them according to its own posture, we cannot know what things truly are in themselves, being that nothing comes to us but what is falsified and altered by the senses. Where the compass, the square, and the rule are crooked, all propositions drawn from thence, and all building erected by those guides, must of necessity be also defective. The uncertainty of our senses renders everything uncertain that they produce. (The Apology.)

#### PREJUDICE AGAINST PHYSICIANS

Like his father, Montaigne professed a horror of doctors. This was strengthened perhaps by a conviction that his friend La Boétie might have recovered but for the ill-advised ministrations of his physician,

and in one of his last essays he indulges in a diatribe against the faculty which we may all read with profit. But what he confessed and what he professed sometimes showed a certain lack of harmony in line with the many apparent contradictions of his character. Looking below the surface we find that Montaigne saw the foibles of the doctors of his day, had the intelligence to appreciate the mistakes they made but was not carried away by prejudice.

We repute physicians fortunate when they hit upon a lucky cure, as if there were no other art but theirs that could not stand upon its own legs, and whose foundations are too weak to support itself upon its own basis, and as if no other art stood in need of fortune's hand to assist in its operations. For my part, I think of physic as much good or ill as anyone would have me; for, thanks be to God, we have no great traffic together. I am of a quite contrary humour to other men, for I always despise it; but when I am sick, instead of recanting, or entering into composition with it, I begin yet more to hate, nauseate, and fear it, telling them who importune me to enter into a course of physic, that they must give me time to recover my strength and health, that I may be the better able to support and encounter the violence and danger of the potion: so that I still let nature work, supposing her to be sufficiently armed with teeth and claws to defend herself from the assaults of infirmity, and to uphold that contexture, the dissolution of which she flies and abhors: for I am afraid, lest instead of assisting her when grappled, and struggling, with the disease, I should assist her adversary, and procure new work, and new accidents to encounter. (Various Events, etc.)

He was really a friend of medicine and believed in the healing art, though he says, with his usual outspoken and unassuming frankness, that the doctors had done him no good. His pages reflect a terrible but true picture of the state of medicine in his day and when we realize that his excruciating pain was unrelieved, that he suffered from a complaint that we cannot heal today

with all our science, we must credit Montaigne with unusual fairness to see any good in us or our calling. Though he professed to repudiate us utterly still he did not do so. Little as he expected from them, he called in the doctors.

His writings abound with illustrations drawn from anatomy, physiology and pathology and he loved to express his ideas by references to the body:

Force and nerves cannot be borrowed; you can only borrow cloaks and furbelows. . . Those who have a thin body, stuff it out with padding; those who have thin subject-matter swell it out with words. (Education of Children.)

For tender stomachs there is need of artificial ordinances and constraint; good stomachs simply make use of the ordinances prescribed by natural appetites. (Of Vanity.)

Intemperance is the pestilence which killeth pleasure, and temperance is not the flail of pleasure, it is the seasoning thereof. (Of Experience.)

And as we see women that without the knowledge of men do sometimes of themselves bring forth inanimate and formless lumps of flesh, but that to cause a natural and perfect generation they are to be husbanded with another kind of seed. (Of Idleness.)

A physician takes no pleasure in the health even of his friends, says the ancient comical Greek, nor a soldier in the peace of his country; and so of the rest. And, which is yet worse, let every one but dive into his own bosom, and he will find his private wishes spring and his sacred hopes grow up at another's expense. (Profit of One Man is the Inconvenience of Another.)

'Tis a sign of crudity and indigestion to vomit up what we eat in the same condition it was swallowed down, and the stomach has not performed its office, unless it has altered the form and condition of what was committed to it to concoct. (Education of Children.)

And as they say, that in our bodies there is a congregation of divers humors, of which, that is the sovereign, which according to the complexion we are of, is commonly most predominant in us; so, though the soil have in it divers

motions to give it agitation; yet must there of necessity be one to over-rule all the rest. (Cato the Younger.)

Do fevers, gouts and apoplexies, spare them any more, than one of us? When old age hangs heavy upon a prince's shoulders, can the yeomen of his guard ease him of the burden? When he is astonished with the apprehension of death, can the gentlemen of his bed-chamber comfort and assure him? When jealousy, or any other capricio swims in his brain, can our complements and ceremonies restore him to his good humour? The canopy embroidered with pearl and gold, he lies under, has no virtue against a violent fit of the stone or colic. . . . He is a sot, his taste is palled and flat; he no more enjoys what he has, than one that has a cold, relishes the flavour of canary; or than a horse is sensible of his rich caparison. (Of the Inequality Amongst Us.)

Could virtue itself put on flesh and blood, I believe the pulse would beat faster going on to an assault, than in going to dinner: that is to say, there is a necessity she should beat, and be moved upon this account. I have taken notice, as of an extra-ordinary thing of some great men, who in the highest enterprises, and greatest dangers, have detained themselves in so settled and serene a calm, as not at all to hinder their usual gayety, or break their sleep. (Of Sleep.)

So falling people extend their arms before them by a natural impulse, which prompts them to offices and motions, without any commission from us. (Use Makes Perfectness.)

I would as willingly lend a man my blood, as my pains. (Of Presumption.)

The diseases of the body explain themselves in increasing. We find that to be the gout, which we called a rheumatism or a strain. The diseases of the soul, the greater they are, keep themselves the more obscure; and the most sick are the least sensible. Therefore it is that with an unrelenting hand, they must often in the day be taken to task, opened and torn from the hollow of the heart. (Upon Some Verses of Virgil.)

These continual tricking drops make ulcers in me. . . . The Chirurgion's end is not only to eat away the dead flesh, that is but the

progress of his cure, he has a care over and above to fill up the wound with better and more natural flesh, and restore the member to its due estate. Whoever only proposes to himself to remove that which offends him, falls short, for good does not necessarily succeed evils; another evil may succeed and a worse. . . . Who knows but that God will have it happen, as it does in human bodies, that purge and restore themselves to a better estate by long and grievous maladies; which restores them a more entire and perfect health than that they took from them? (Of Vanity.)

I fancy that those features and moulds of a face, and those lineaments by which men guess at our internal complexions, and our fortunes to come, is a thing that does not very directly and simply lie under the chapter of beauty and deformity, no more than every good odor and serenity of air promises health, nor all fog and stink, infection and a time of pestilence. Such as accuse ladies of contradicting their beauty by their manners, do not always hit right; for, in a face which is none of the best, there may lie some air of probity and trust: as, on the contrary, I have seen betwixt two beautiful eyes, menaces of a dangerous and malignant nature. There are some physiognomies that are favorable, so that in a crowd of victorious enemies, you shall presently choose, amongst men you never saw before, one rather than another, to whom to surrender, and with whom to intrust your life, and yet not properly upon the consideration of beauty. (Of Physiognomy.)

Speaking of the propriety of referring a matter to the person proficient in it he says of physicians: "I upon that account the rather incline to credit what they report of the temperature of the air, of the health and complexions of princes, of wounds and diseases." (A Proceeding of Some Ambassadors.)

#### MONTAIGNE'S VIEWS ON HIS OWN AILMENTS

In his essay on "The Resemblance of Children to their Fathers," he laments that he was afflicted with the particular disease that attacked him towards middle life.



How human! We always think we would be better off with a different malady—that an injured foot would hurt less than a hand or vice versa according to which it is. "I am grown older by seven or eight years since I began [writing], neither has it been without some new acquisition. I have in that time been acquainted with the stone. Age could not possibly have laid upon me a disease for which, even from my infancy, I have had so great a horror and it is in truth of all the accidents of old age that of which I have ever been most afraid." His father, towards the close of a long and active life, was a prey to the same malady and this perhaps accounts in part for his horror of it, an almost superstitious dread of the gout being over him like a cloud.

Mothers have reason to rebuke their children when they counterfeit having but one eye, squinting, lameness, or any other personal defect; for besides that their bodies being then so tender may be subject to take an ill bent, fortune, I know not how, sometimes seems to delight in taking us at our word; and I have heard several examples related of people who have become really sick by only feigning to be so. I have always used, whether on horseback, or on foot, to carry a stick in my hand, and so as to affect doing it with a grace. Many have threatened that this wantonness would one day be turned into necessity, that is, that I should be the first of my family that should have the gout. (Not to Counterfeit Being Sick.)

A more potent factor doubtless, in his dislike to the so-called healing art, was the full knowledge and appreciation of the barbarities of the "cutters" of the day, of the ignorant and violent methods they used for their cures, of the character of so-called surgery. Here is the true philosopher speaking. "Yet in eighteen months time or thereabout that I have been in this uneasy condition I have so inured myself to it as to be content to live in it and have found wherein to comfort myself and to hope."

He says of the stone: "I am in conflict

with the worst, the most sudden, the most painful, the most mortal and the most irremediable of all diseases," but he opines that even this dread malady "is very well to be endured by a man who has his soul free from the fear of death, and the menaces, conclusions and consequences which physic is ever thundering in our ears." He trusts that the affliction of stone will overcome whatever in him still revolts at the thought of death and conquer his fear thereof, hoping at the same time that God will save him from going to the other extreme of desiring and wishing to die should the sharpness of his torture in the end prove greater than he can bear.

He thinks that external fortitude which subdues all expressions of suffering not an indispensable thing if the soul is indomitable. "'Tis no great matter what faces we cut if we find any ease by it . . . if agitation eases him let him tumble and toss at pleasure; if he finds the disease evaporate (as some physicians hold that it helps women in delivery) extremely to cry out or if it do but amuse his torments, let him roar aloud."

It is not to be wondered at that, as a great sufferer and one who steeped in classic lore had the example of the ancients before him, he should have considered suicide. He reviews the subject pro and con and his final conclusion is heroic, beautiful.

Pliny says, there are three sorts of diseases, to escape any of which a man has a good title to destroy himself; the worst of which is the stone in the bladder, when the urine is suppressed. . . . For a desperate disease a desperate cure. . . . The stoicks say, that it is living according to nature in a wise man to take his leave of life even in the height of prosperity, if he do it opportunely, and in a fool to prolong it, though he be miserable, provided he be indigent of those things, which are reputed the necessities of human life. As I do not offend the law provided against thieves, when I embezzle my own money, and cut my own purse, nor that against incendiaries, when I burn my own wood; so am I not under the lash of those made against

murderers, for having deprived myself of my own life. Hegesius said, that as the condition of life did, so the condition of death ought to depend upon our own choice; and Diogenes meeting the philosopher Speusippus, so blown up with an inveterate dropsy that he was fain to be carried in a litter, and by him saluted with



Mademoiselle de Gournay, one of Montaigne's ardent admirers whom he called his "adopted daughter." She acted as one of the editors of an edition of his "Essays" published after his death.

(From the painting by Matheus, a copy of which appears in "Montaigne, L'Homme et L'Oeuvre," by P. Bonnefon, Paris, 1893.)

the compliment of, I wish you good health; no health to thee, replied the other, who art content to live in such a condition. And in truth, not long after, Speusippus weary of so languishing an estate of life, found a means to die. But this does not pass without admitting a dispute: for many are of opinion, that we cannot quit this garrison of the world, without the express command of him, who has placed us in it: and that it appertains to God, who has placed us here, not for ourselves only, but for his glory, and the service of others, to dismiss

us when it shall best please him, and not for us to depart without his license: but we are not born for ourselves only, but for our country also, the laws of which require an account from us, upon the score of their own interest, and have an action of man-slaughter good against us. Or if these fail to take cognizance of the fact, we are punished in the other world, as deserters of our duty. There is more constancy in suffering the chain we are tied in, than in breaking it. . . . No accidents can make true virtue turn her back. (The Custom of the Isle of Cea.)

In analyzing pain and pleasure he says:

Philosophy, when she has said all she can refers us, at last, to the example of a wrestler, or a muleteer, in which sort of people we commonly observe much less apprehension of death, sense of pain, and other infirmities, and more constancy, than ever knowledge furnished any one withal, that was born without those infirmities, and of himself prepared by a natural habit. . . . When real infirmities fail us, knowledge lends us hers: that color, that complexion, portend some defluxion: this hot season threatens us with a fever: this breach in the life-line of your left hand, gives you notice of some near and dangerous indisposition, and at last, roundly attacks health itself; saying this spriteliness and vigor of youth, cannot continue in this posture, there must be blood taken, and the heat abated, let it run to your prejudice. Compare the life of a man subjected to such imaginations, to that of a laborer that suffers himself to be led by his natural appetite, measuring things only by the present sense, without knowledge, and without prognostic, that feels no pain or sickness, but when he is really tormented or sick: whereas the other has the stone in his soul, before he has it either in his reins or bladder: as if it were not time enough to suffer the evil when it shall come he must anticipate it by fancy, and run to meet it. What I say of physic, may generally serve in example for all other sciences: from thence is derived that ancient opinion of philosophers, that placed the sovereign good, in the discovery of the weakness of our judgment. My ignorance affords me as much occasion of hope, as of fear:

and having no other rule for my health, than that of the examples of others, and of events I see elsewhere upon the like occasion: I find of all sorts, and rely upon those which by comparison are most favorable to me. I receive health with open arms, free, full and entire, and by so much it is at present less ordinary, and more rare: so far am I from troubling its repose and sweetness, with the bitterness of a new and constrained manner of living. . . Would you have a man sound, would you have him regular, and in a steady and secure posture? Muffle him up in the shades of stupidity and sloth. We must be made beasts to be made wise, and hoodwinked before we are fit to be led. And if one shall tell me that the advantage of having a cold and stupid sense of pain and other evils, brings this disadvantage along with it, to render us consequently less sensible also in the fruition of good and pleasure; this is true; but the misery of our condition is such, that we have not so much to enjoy, as to avoid, and that the extremest pleasure does not affect us to the degree that a light grief does. . . I do not approve such an insensibility, as is neither possible, nor to be desired. I am very well content not to be sick: but if I am, I would know that I am so; and if a caustic be applied or incisions made in any part, I would feel them. In truth, whoever would take away the knowledge and sense of evil, would at the same time eradicate the sense of pleasure, and finally annihilate man himself. (The Apology.)

For himself, Montaigne, though confessing to an occasional "peevishness and crabbed humor" in a very sharp fit, has never arrived at "such a degree of despair as to bellow and make uproar." He was never beside himself with pain to the extent of not being able "to speak, think and give a rational answer as well as at any other time" but he could not do so as coldly and indifferently as when free from pain. "In the intervals from excessive torment when my ureters only languish without any

great dolor I presently, feel myself in my wonted state."

Speaking of colic: "It begins with me after a more sharp and severe manner than it uses to do with other men. My fits come so thick upon me that I am scarcely ever at ease" and he adds that he is better off than a thousand others who have no fever, no other disease but what they create for themselves for want of meditation. His description of the impaction and descent of a stone is classic. "Thou art seen to sweat with pain, to look pale and red, to tremble, to vomit well-nigh to blood, to suffer strange contortions and convulsions, by starts to let tears drop from thine eyes, to urine thick, black, and frightful water, or to have it suppressed by some sharp and craggy stone, that cruelly pricks and tears thee."

Montaigne believed that he derived his trouble from his father but does not understand how it was transmitted.

He died wonderfully tormented with a great stone in his bladder. He was never sensible of his disease till the 67th year of his age and before that had never felt any grudging or symptoms of it either in his loins, sides or any other part and had lived till then in a happy vigorous state of health. . . he continued seven years after in this disease and died a very painful death. . . I was born twenty-five years before his disease seized him and in the time of his most flourishing and healthful state of body, his third child in order of birth; where could his propensity to this malady lurk all that while. . . and how so concealed that till five and forty years after I did not begin to be sensible of it? . . . What a wonderful thing it is that the drop of seed from which we are produced should carry in itself the impressions, not only of the bodily form, but even of the thoughts and inclinations of our fathers. (Resemblance of Children to their Fathers.)

(To be continued.)



## THE STORY OF A GREAT CONSULTATION

### JEROME CARDAN GOES TO EDINBURGH

By CHARLES L. DANA, M.D.

NEW YORK, N. Y.

IN 1552, John Hamilton of Edinburgh, Archbishop of St. Andrews, brother of the Regent of Scotland, was in a very distressful state of mind and body. He was forty years old and for ten years he had been suffering from asthma. He had advised with his personal physician and had consulted the royal physicians at the Courts of Francis I and of Charles V of Spain. But he was getting worse. The disease he was told was due to a cold moist brain; a distillation of phlegm accumulating in that organ discharged itself through the wind-pipe into the lungs, causing cough, expectoration and dyspnoea—as well it might. The Archbishop decided to call to his help, Jerome Cardan, then professor of medicine at Pavia, and the most celebrated physician of Europe.

Cardan was fifty years old; he had a wife and three children, and very poor health. After forty years of hardship, antagonism and miscellaneous diseases, he had "arrived." He had a distinguished *clientele* and had been called to be physician to the Pope, and to the King of Denmark. He had declined these honors, and had just resigned his University position, partly for the following curious reason.

Cardan was a strong and not unhumorous believer in omens, and he was also fond of cats. One day his cat, a placid animal, despoiled the manuscript of Cardan's "Lectures on Medicine" then dragged it from the shelves to the floor but left untouched the manuscript of his "Book on Fate;" thereupon Cardan accepting the cat's judgment resigned from the University.

He was free to travel when Dr. William Cassinate the Archbishop's personal

doctor, sent him a letter some 10,000 words long, telling him that he was a great philosopher and begging him to go to Lyons and possibly to Paris where he could see and examine the Archbishop. Cassinate sent him 200 crowns and Cardan started for Lyons with five attendants on February 23, 1552. He travelled by way of Domo d'Ossillo, the Simplon Pass and Geneva to Lyons, the trip taking three weeks.

Neither the Archbishop nor his doctor were there, but Cardan was kept busy with entertainments and consultations for thirty-eight days, at the end of which time Dr. Cassinate arrived with a letter from the Archbishop, explaining that he was too ill and too busy to leave Edinburgh. Would not Cardan come to him? He sent him 300 crowns for his expenses, promised him 10 crowns a day for his trouble besides many honors, presents and "a great harvest of fame and esteem." "Farewell," he says, "most learned Cardanus and visit our Lares to find us not so much of Scythians as you perhaps suppose."

Cardan did not like English weather and did not want to go. He thought England immensely cold; that the grass was full of worms and the sky darkened with crows. But he finally accepted the commission and started for Paris on April 18th, travelling along the River Loire.

He was warmly received in Paris—"Lutetia" as the city was then called. He was entertained by the royal physicians, asked to be physician to the King and to give his services to various nobles of the day. He met in consultation the famous Jacobus Sylvius, teacher of Vesalius, who lectured on anatomy from the fragments of a dog,



CARDUUS hic pupugit subtilem vocis Magistrum:  
Ex herbis nomen das! BENEDICTUS erit.

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Cardan was a subject of the Emperor Charles V. They went to Boulogne, and Calais and thence to London, arriving on June 3, 1552. He stayed there three days and then started for Scotland.

Cardan's journey from London to Edinburgh took twenty-three days, and he arrived there on June 29.

Cardan stayed in Edinburgh till Sep-



Map showing Cardan's route from Milan to St. Andrews via Geneva, Lyons, Paris and London, returning through Ghent, Brussels, Louvain, Cologne, Strassburg, Basle, Berne, and Zurich.

tember 12, a period of ten and one-half weeks. I doubt if he had a very good time in this summer of 1552. Cardan's chief amusements at home were gambling, music and fishing, being most expert in the first. In fact, he paid his way through Padua by successful gambling on which subject he wrote a very good book advising against but instructing in the practice. Cardan did not like politics or theology, or massive attacks on food and drink, which were the standard diversions of the time. And Edinburgh was not as exciting then as it became a little later, when Mary became Queen and John Knox preached heaven and hell to a deserving population. However, he had many consultations with Scottish noblemen and one day he says he took in 19 gold crowns for two prescriptions.

For forty days after his arrival, Cardan did not begin his treatment. Being a prudent man he let the Archbishop's personal physician carry out again the treatment that had been approved by the Paris consultants, Sylvius and Fernel. But the Archbishop grew worse and finally Cardan explained his position. The Archbishop was very much annoyed at the delay, and told Cardan to apply at once his theory of the disease.

Now Cardan thought that the Archbishop's brain instead of being cold and humid, was hot and dry (perhaps we would now say hyperemic). This caused humors distilled in the stomach to rise to the brain. Also the materials of his food were turned into phlegm, which passed into the bronchial tubes, causing cough and expectoration and dyspnoea.

As a matter of fact, the bishop was a great eater and drinker, and took no exercise; he worked hard, kept irregular hours and was not shy with the ladies. Practically, Cardan put him on a Weir Mitchell rest cure. His program was somewhat as follows: He rose at 8 and took one day in eight, a shower-bath—the first ever taken in Scotland. Then he took a quiet walk in a shady place, chewing a little mastic, the sixteen-century substitute for pepsin gum. This caused expectoration and helped purge the brain.

At 9 o'clock he had breakfast, consisting of liver with a little ginger and some bread, with two ounces of white wine. After this he could have a little chicken and a little more wine. After breakfast he rested and amused himself. From 12 to 4, he was allowed to attend to his business, but was forbidden to write letters with his own hand. At 4 he went out for an hour's ride on horseback. He then, sitting or reclining, was allowed to give audience to those who wished to see him. He had supper at 7 o'clock which was like his breakfast, but opened with a sixteenth-century cocktail

consisting of a teaspoonful of pure honey. He was to go to bed at half past eight and secure 10 hours of continued sleep. As specialties in the diet, he was recommended turtle soup, snails, barley water and chicken broth.<sup>1</sup>

The above is a general outline of the treatment, but there were added many incidental details.

The chief object of Cardan's cure by medicine, was to reduce the unhealthy temperature of the brain. To do this, the head, he said, must be purged and before that there must be a purgation of the body. The head was purged in those days through the palate, the nose and the sutures of the skull. So Cardan blistered the coronal suture and poured a mixture of milk and water with 2 grains of elaterium through the nose, this being done on an empty stomach. Cardan did not believe in blood-letting nor in much medicine, and these were about the only medications that the patient received; but the attention to hygiene and diet was very strict and definite. Cardan limited the amount and character of the Archbishop's food, kept him away from the hot sun, forbade him to sleep on a feather bed and made him use a linen pillow. He gave him as a laxative preserved peaches and sugar of violets, avoiding purgatives. He made him drink a quart of milk a day. He was told to brush his head vigorously every morning with an ivory comb and to give his extremities a vigorous rubbing. He also advised him to buy a clock.

He allowed him only two meals a day—a breakfast and supper—and as a fattening agent, he gave him 2 ounces of sugar water, dissolved in the broth of a young pig. He gave him cold-natured food which would resist the attraction of the hot brain.

All this, it seems to me today, was very

<sup>1</sup>Incidentally, Cardan gave advice as to the Archbishop's social hygiene. "De venere, ubi contingat necessitas debet uti ea inter duos somnos, scilicet post

good and modern treatment—no bleeding, no purgations, no polypharmacy. There must have been some sensible and practical masters of the medical art in those days. Personal hygiene, diet, exercise, cold baths, rest, sleep—what more could Sir James Mackenzie of London and St. Andrews have done for an Archbishop today?



Edinburgh in 1544.

At any rate, the Archbishop began speedily to improve and Cardan to get homesick. By September Cardan insisted on going home—and the Archbishop finally consented. He gave him 1800 gold crowns, much more money than was agreed upon, and many presents including a gold chain worth 125 crowns. He also promised to write to Cardan in two years telling of his

medicam noctem, et melius est exercere eam ter in sex diebus pro exemplo ita ut singulis duobus diebus semel quam bis in una die."



tella bis in die cum aqua decocta cum modico Iuleb: rosati, abluendo à vino.

Evacuationes faciendæ doloribus instantibus presenti medico relinquuntur.

In principio dolore instanti super eius loco fiat emplastrum ex tribus partibus aquæ, quarta parti aceti & fursure frumenti q. l. simul decoctis, quod moderate calidum applicetur loco dolenti, donec vsque ad 4 horas quinque vel sex amoveatur.

Item fiat emplastrum ex tribus partibus aquæ & quartæ parti aceti, & farina lupinorum q. 8. simul decoctis quod moderate calidum dolenti loco applicetur, nec vsque ad horas quinque vel sex amoveatur.

Duo supra scripta emplastra consueverunt potenter dolorem remittere duabus vel tribus applicationibus. Alia tamen fieri possunt & primo ex plantagine lentibus decoctis pane & oleo rosato in hunc modum.

℞. Foliorum plantaginis.

Lentium bene decoctarum in aqua.

Medulle panis. añ. q. l.

Contundantur simul, & cum oleo rosato fiat emplastrum lene quod loco dolenti similiter applicetur; vel ex fapa sen vino decocto, oleo rosato, fiat vnguentum molle loco similiter dolenti applicandum: si verb magna sentiretur in loco dolente caliditas ex farina hordei cum oleo rosato & aliquo ex succis frigidis vt sunt succus semperuiui solatri, portulacæ, endiuiz, Poligani, Iulquiani, l'apaveris rosarum, fiat emplastrum quod loco dolenti similiter applicetur, tepidum, aut frigidum, vel ex farina hordei cum mucilage pulij q. 5. fiat emplastrum vel ex oleo rosato & cera cum aliquo ex succis dictis fiat vnguentum molle, loco similiter dolenti applicandum. Potentiora tamen & vtiliora ad remittendum d. dolorem sunt primo duo emplastra scripta que continentur donec dolor satis remissus sit, quo tempore inungatur locus ex linimento infra scripto.

℞. Pinguedinis vituli 3. iij.

Salis viti. 3. ij.

Olei communis. 3. j.

Misce, & fiat lenimentum molle, dolore vero quasi ex toto remoto inungatur locus cum infra scripta decoctione.

℞. Pinguedinis tauri. 3. iij.

Salis viti. 3. ij.

Olei Antiq. 3. j. 8.

Misce, & fiat lenimentum; & si non inuenerit Pinguedo Tauri capiatat pinguedo bouis.



### CONSILIUM LII.

*Ephemeris sue vite ratio pro Reuerendissimo D: Archiepiscopo Sancti Andree D D. Joanne Amaltheo.*

**Q**uamvis ex generali consilio satissimum C. Tuae esse crediderim idque muneri absolueris sit egregius tuus medicus Galenatus, ne tamen in vilo doctis tibi

videat, quandoquidem ex prescripto in patriam redire cogor, pauca hæc in ordinem diuinum in gratiam tuam memos beneficiorum tuorum, & quod principium precepta sunt, redegi. Iustum ab hora qua expergitur lucendo, quod in estate sit gratia exempli hora sexta, scilicet more proprio à nocte media: primum explorandam an sufficienter dormierit id ex tribus habetur indicis: primum est à debito horarum spacio, quod Galenus sexto de turpila sanitate (cap. 5.) horarum existimare notat. Nunc omittis omnibus disputationibus solum necessaria & clarissima & absque dubitatione in medium adducam. Quod si quis rationem repositat, eam postmodum reddam. Igitur vt ad propositum reuertar: secundum signum perfecti somni est capitis leuitas & alacritas. Cum enim somnus fiat ad reparandum spiritum animalem qui in cerebro continetur manifestum est quod spiritus animal reparato comode somnus cessat. Tunc vero necesse est vt caput alacre ac leue sit, & sensus ac mens negata reparatis spiritibus. Quod si secus homo se habet indicium est etiam si horis debitis dormierit non fatusse esse somnum. Tertium indicium est à ventriculi coctione: nam cum ventriculum concoxisse sensierit indicio est dormisse satis. Hæc enim est secunda vtilitas somni, scilicet concoctio cibi in ventriculo. Cum igitur nondum natura finem propriis assecuta est, si antea cesset somnus non satisfecit. Porro quoniam pacto concoxisse se sentiet in ventriculo id erit cum neque grauitas vlla in ventriculo nec ructus aliquis sed quasi vbi sit ventriculus penitus igni rer, leuem se sentiat. Quod si vel caput adhuc graue, vel ventriculum non concoxisse animaduertat, non surgat omnino. Sed vel dormiat vel quiescat saltem. Nihil enim proficere potest fugando: nam si exerceatur, pessimum est, cum crudus adhuc sit cibus in ventriculo, hoc enim nihil est deterius, vt in libro de cibis boni & mali succi Galen docet. Nec si quiescat quicquam proficiet. Nihil autem melius esse somno intelligat nec excogitari posse. Nam cum tabus maxime in ligat, bona coctione ne humor ille crudus abundet, & vt possit impingui: somnus si quod aliud coctiones iuuat, vt quarta Aphorismorum (Aphor. 17) Galen. docet, ob id ad instaurandum corpus quicquam melius somno esse potest, & ad minuendam materiam que morbum facit. Hæc igitur duo que à coctione perfecta reparantur somnus exhibet, vt nihil melius illius diuturnitate esse possit nec excogitari: Horum adduco plures hæc in causa auctoritates, quoniam omnia sunt innumera, & neque aliud Galen. dicit, primum quod somno vel hac sola causa prolixiori esset indulgendum. Secunda est totius corporis humectatio vt etiam habetur quinto de tuenda sanitate (cap. 4. in principio). Manifestum est autem quod habitus hic senilis proflus est, seu ad imbecillitatem respiciat, seu ad humiditatem inutiles & crudi abundantiam. Tertia est quod omnia membra per somnum interius seculum reparant, dico pulmo & cor, vt habetur

D d s betur.

condition, which he did. Cardan had the follow-up system of today.

Before Cardan left his patient, he prepared and wrote out his *Consilium Medicale* in which he gave his theory of the disease and provided for every detail of treatment. This made a document twenty folio pages long.

It is possible that the Archbishop asked for something simpler. At any rate Cardan wrote out a shorter outline of treatment of seven folio pages which he called an *Ephemeris*. Both *Consilia* are printed in Cardan's "Opera Omnia" which appeared ten years before his death, 1563.

ABSTRACT OF CARDAN'S EPHEMERIS OR RULE  
OF LIFE FOR THE MOST REVEREND D.

ARCHBISHOP OF ST. ANDREWS D.D.,

JOHN HAMILTON

Although I believe that my general counsel was satisfactory to you and your distinguished physician Casanati, nevertheless lest there should be anything lacking when I am away, I have arranged these few rules in recognition of your kindness and because the requests of princes are commands.

*First:* In the first place, after you have arisen, the question if you have good sleep must be considered according to the three rules of Galen, viz:

1, It must be sufficient. And "this," says Galen, "should be 9 hours;"

2, It should be sound. The sign of sound sleep is clearness and alacrity of the head on awaking [*levitas et alacritas capitis*].

3, One should awaken without symptoms of stomach disturbance (*cum ventriculum concoxisset senserit indicio est dormisse satis*).

Having argued for a column on the need of healthy sleep, he says:

Therefore to repeat, nothing is better than sleep to him who would rest his brain and reconstruct himself, as Galen taught "*primo de symptomatum causis*." (Cap. 8.)

*Second:* Friction—massage.

When sufficient rest and sleep are obtained, let yourself be rubbed, using two brushes.

The Galenic order of rubbing, is first the thighs, then the arms, breast and stomach. The details of this rubbing are gone into, "because," says Cardan, "of the vehement utility of the matter" (*proper vehementem utilitatem rei*).

*Third:* After the friction, there should be a movement of the bowels, if possible, spontaneously; if not, using an enema containing the juice of mercurialis or boiled spinach with oil of rose, or violets, or honey.

Cardan discourses long on the importance of having spontaneous movements (*lenitas alvi*), and quotes Avenzoar as having shown that the habit conferred immunity against many diseases.

*Fourth:* Let him drink 3i to 5ii of warm water distilled with the root of althea and leaves of portulaca and plantain, adding a little sugar.

Then let him comb his hair gently with an ivory comb.

*Fifth:* Exercise in the open air every day freely, shoot with bow, take walks, even read aloud in a high voice, nevertheless with suavity (*alta voce cum suavitate tamen*).

Let the exercise be a pleasurable one (*exercitatio cum voluptate*) and done in suitable garments.

*Sixth:* It is of the greatest importance that the head be bathed with hot water every eighth day, then suddenly pour on about 5 pounds of cold water and rub with a warm towel.

He adds that he should not be afraid, for after a time the head will get used to it and be strengthened (*successu temporis confirmabit cerebrum*).

*Seventh:* It is of the greatest importance that every morning when the patient goes out of the house, he should chew 2 grains of fresh white soft mastic. This will cause much expectoration, and thereby help to purge the brain.

After these special points, Cardan goes on to prescribe exactly a schedule of his daily life regarding his meals, his exercise, rest, work. He goes into many points particularly about food—for Cardan was

something of a cook himself, and a dietitian. He tells him how to take ass's milk and how to drink water (*Modus capiendi aquam*).

At the end of his *Consilium* as remedies for the asthmatic seizures, he suggests clysters of oxgall and salt. Also, when the seizure begins, he advises the patient to tickle his throat with a feather until he vomits. Then later, if needed, bind his arms and thighs with rope for 15 minutes.



Portrait of Edward VI.

(From an engraving of a portrait hung in Kensington.)

He ends his *Epbemeris* with another admonition about sleep:

Let him be quiet in bed ten hours and sleep nine if possible.

Let the decubitus be prone and in a cool room, use a linen pillow and wear a light solid nightgown. Have a fire in the cubicle by day, but not by night and let it be a wood fire.

These, therefore, are the general rules for one day.

Cardan left Edinburgh in September and spent some weeks in London as a guest of the Court. Edward VI, a youth of

fifteen, had been for six years the king. Those who have read or seen Mark Twain's "The Prince and the Pauper" will recall what a prodigy of learning and cleverness the young king was assumed to be. Cardan found him all that the novelist pictures.

I was told that he had already mastered seven languages. In his own language, French, and Latin, he was perfect. He was not ignorant of dialectics, and in all things teachable. When I had speech with him he was fifteen years old, and he asked me (speaking Latin with as much polish and promptitude as I could use myself)—

"What is there in those rare books of yours on the Variety of Things?" For I was obtaining leave to dedicate them to him.

Then I: "In the first chapter I show the cause of comets, long sought for in vain."

"What is it?" says he.

"The concurrence," I say, "of the light of the planets."

But the king: "How it is, since the motions of those stars are different, that it is not dissipated, or does not move in accordance with their motion?"

But I: "It does so move, only much faster than they, on account of the difference of aspect, as the sun shining through a crystal makes a rainbow on a wall. A very slight movement of the crystal makes a great change in the rainbow's place."

But the king: "And how can that be done when there is no *subjectum*, for to the rainbow the *subjectum* is the wall."

Then I: "It occurs as in the milky way, and by the reflection of lights. When many candles are lighted near one another they produce between themselves a certain lucid and white medium. Therefore, *ex ungue leonem*, as they say."

Having given this very candid illustration of the quickness of the king's intelligence, Cardan goes on immediately in a strain of genuine and hearty admiration:

This boy filled with the highest expectation every good and learned man, on account of his ingenuity and suavity of manners . . . When a royal gravity was called for, you would think it was an old man you saw, but he was



blat and companionable as became his years. He played upon the lyre, took concern for public affairs, was liberal of mind, and in these respects emulated his father, who, while he studied to be too good, managed to seem bad. But the son was free from all suspicion of crime, his disposition was completely trained to philosophic studies.

The impression made upon Cardan by the young king was, indeed, very great. He says: "The boy of so much wit and so much promise was, by a great miracle, being educated to a comprehension of the sum of human things. I do not here adorn the truth . . . And there was the mark in his face of death that was to come too soon. Otherwise he was comely, because of his age and of his parents, who had both been handsome."

Cardan was asked to Court by the nobles, not to treat the boy, but to find out through his astrology how long the king would live. Jerome Cardan seemed to love the boy, and he saw enough of the Court, dominated by selfish, ambitious and unscrupulous men, to fear for his future. But he fitted out a horoscope giving him about 20 years. Edward died the following spring—some say poisoned.

The stranger, of course, carried away with him from England certain impressions of a people among whom he had for some months been sojourning. Of their emotions he reports:

It is worth consideration, that the English care little or not at all for death. With kisses and salutations parents part; the dying say that they depart into immortal life, that they shall there await those left behind; and exhort the others to retain them in their memory. Cheerfully, without blenching, without tottering, they bear with constancy the final doom. They surely merit pity who with such alacrity meet death, and have no pity on themselves.

In figure they are much like the Italians; they are white—whiter than we are, not so ruddy; and they are broad-chested. There are some among them of great stature; urbane and

friendly to the stranger, but they are quickly angered and are in that state to be dreaded. They are strong in war, but they want caution; greedy enough after food and drink, but therein they do not equal the Germans. They are rather prone than prompt to lust. There are great

**HIERONIMI**  
C. CARDANI MEDICI MEDIOLA  
NENSIS, PRACTICA ARITH-  
metice, & Mensurandi singulatis. In qua  
que preter alias continentur, versa  
pagina demonstrabit.



An unusual portrait of Cardan, appearing on the title-page of his "Practica, Arithmetice," Milan, 1539.

intellects among them—witness Duns Scotus and Suiseth, who rank second to none. In dress they are like Italians; for they are glad to boast themselves most nearly allied to them, and therefore study to imitate as much as possible their manner and their clothes. And yet, even in form, they are more like the Germans, the French, and the Spaniards.

When I looked among those groups of English sitting together, I completely thought myself to be among Italians; they were alike, as I said, in figure, manners, dress, gesture, colour, but when they opened their mouths I could not understand so much as a word, and wondered

at them as if they were my countrymen gone mad and raving. For they inflect the tongue upon the palate, twist words in the mouth and maintain a sort of gnashing with the teeth.

While in London Cardan received an invitation to go to the Court of France, as royal physician. But he declined. In fact, he had now received so much money that he was afraid to travel in the war-disturbed



region of France. So he started back by way of Belgium, Holland, and the Rhine.

When Cardan left London for home, he planned to do a little visiting. He was a great mathematician as well as doctor, and was really responsible for introducing the great art of algebra into the schools of Europe. (Doctors were often mathematicians in those days. When Sancho Panza fell off his mule, he cried out, "Send for an Algebraist.") Now there was a celebrated doctor and mathematician at the University of Louvain, named Gemma Frisius. So Cardan crossing at Dover, went to Ghent

and Brussels, and then to Louvain where he spent a few days with Frisius.

Thence he went to Cologne, and up the Rhine to Strassburg and stopped at Basle where he was entertained and given a mule worth 100 crowns. He pursued his way to Berne and Zurich where he visited Conrad Gesner. Conrad Gesner was a physician, a botanist, a zoologist and one of the most industrious and learned men of all time. He published in twenty volumes a catalogue of all the writers who had ever lived. He was a friend and helper of all the learned men of his century.

Cardan finally left Zurich, went into Italy, sailed across Lake Como and came into Milan on January 3, 1553, having been gone 310 days.

Cardan's autobiography "De Vita Propria" gives direct insight into the character of this physician whose reputation travelled from Italy to England. The book is quite short, very objective, unsparing in its self-analysis and full of curious details of the author's personality and career. It has been called one of the three great autobiographies in literature; the others being Caesar's "Annals" and Rousseau's "Confessions."

Cardan was sensitive, affectionate, introspective, imaginative, superstitious, humorous, inclined to ideas of self-reproach with high ambition and hypomanic industry. Concerning his own weaknesses, he admits he was always inclined to sensuous pleasures. Of these, he adds, his worst and greatest was his love of music. In his book he becomes very melancholy over this defect in his morals. He was not of the woman-pursuing type, but he wrote some advice to his sons about love.

Love is a pleasant torture, a noble folly and a madness of a unique kind.

It is the fruit of youth, the crime of age. To love and to be wise belongs to the Gods alone.

As to Cardan's standing in retrospect.





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The great personalities in medicine in his century were Vesalius, Paracelsus and Paré—men who broke away from the past and contributed to human progress. Cardan represents the learned medical man of the sixteenth century. His only original and lasting contribution to science was to mathematics and the great art of algebra. His

career and writings reflect what was best in the art, practice, learning and ethics of the day. In his art he was not behind later centuries. In his ethics he was abreast even of those of today. As a type of his time, he is an accessible mirror of the medicine, learning and life in the University world of the sixteenth century.

### LINES TO A SKELETON

This is the usual title applied to the following poem, although the original title under which it was published in the *European Magazine and London Review* for 1816, was "A Fragment Found in a Skeleton Case." It was signed solely with the initial V. There has been much dispute as to who was the author but it is now regarded as definitely proven that it was written by Miss Anna Jane Vardill, the author of

several other poetical works. She was the daughter of the Reverend John Vardill, who was born in the American Colonies but, being a Tory, went over to England at the outbreak of the Revolution. Miss Vardill was born in London, married James Niven and died in Yorkshire in 1852.

We owe our information to the kindness of Mr. William Abbatt of Tarrytown, who sent it with a copy of the poem to the ANNALS.

Behold this ruin! 'Twas a skull  
Once of ethereal spirit full;  
This narrow cell was Life's retreat,  
This space was Thought's mysterious seat.  
What beauteous visions filled this spot,  
What dreams of pleasure, long forgot!  
Nor hope, nor love, nor joy, nor fear,  
Has left one trace of record here.

Beneath this mouldering canopy  
Once shone the bright and busy eye;  
But, start not at the dismal void,  
If social love that eye employed,  
If with no lawless fire it gleamed,  
But through the dews of kindness beamed,  
That eye shall be forever bright,  
When stars and suns are sunk in night.

Within this hollow cavern hung  
The ready, swift and tuneful tongue;  
If falsehood's honey it disdained,  
And where it could not praise, was chained;  
If bold in Virtue's cause it spoke,  
Yet gentle concord never broke  
This silent tongue shall plead for thee,  
When time unveils eternity.

Say, did these fingers delve the mine?  
Or with its envied rubies shine?  
To hew the rock, or wear the gem  
Can little now avail to them.  
But if the page of truth they sought,  
Or comfort to the mourner brought,  
These hands a richer meed shall claim  
Than all that wait on Wealth or Fame.

Avails it, whether bare or shod,  
These feet the paths of duty trod?  
If from the bowers of Ease they fled  
To seek Affliction's humble shed;  
If Grandeur's guilty bribe they spurned,  
And home to Virtue's cot returned,  
These feet with angel's wings shall vie,  
And tread the palace of the sky.

# AN UNRECOGNIZED ANGLO-SAXON MEDICAL TEXT

By CHARLES AND DOROTHEA SINGER

OXFORD, ENGLAND

## INTRODUCTION

OUR knowledge of the earliest vernacular medical literature of Western Europe depends almost entirely on the Anglo-Saxon writings. Of the documents of this literature that have come down to us, few, however, were written before the Norman Conquest.<sup>1</sup>

The Normans were widespread over Europe in the eleventh century, and about the period of their invasion of England they established themselves also in Sicily and southern Italy, and in 1076 became masters of Salerno. It is thus not surprising that the learning of the medical school of Salerno soon penetrated to the shores of Britain, and although the inscription of the famous poem, the "Regimen Sanitatis Salerni," to the King of England, as well as its ascription to the year 1101, are doubt-

<sup>1</sup> A list of the published Early English texts is given by K. Sudhoff in his "Die gedruckten mittelalterlichen medizinischen Texte in germanischen Sprachen." (*Arch. f. Gesch. d. Med.*, Leipzig, 1910, Vol. iii, p. 297.) Sudhoff gives nineteen Anglo-Saxon texts of which perhaps nine may be regarded as before 1100 A.D. Only one or two of these, however, can be before 1066.

<sup>2</sup> The "Compendium Medicinæ," though compiled by an Anglo-Saxon speaking writer, is in Latin. The text exists in only one MS., viz., St. John's College, Oxford 17, and has been reprinted by one of the writers. See Charles Singer: "A Review of the Medical Literature of the Dark Ages, with a New Text of about 1110," in *Proc. Roy. Soc.*, (Sect. of Hist. of Med.) 1917, Vol. x, pp. 107-160, and Charles Singer: "A Medical Compendium of the First Half of the Twelfth Century," *Bull. Soc. Med. Hist.*, Chicago, Jan., 1917. The text printed in these works borrows from the Salernitan Giovanni Monaco.

less due to later errors, they are yet the echoes of a real cultural movement. At any rate, in the early years of the twelfth century English medical writers were borrowing extensively from Salernitan sources. This is especially the case with the two latest medical compositions by Anglo-Saxon writers, one of which, for want of a title, we may call the "Compendium Medicinæ" and the other, the better known, "Peri Didaxeon." The MS. of the "Compendium," dating from about the year 1110,<sup>2</sup> has borrowed whole passages from the Salernitan Giovanni Monaco (*floruit circa 1080*),<sup>3</sup> while the slightly later "Peri Didaxeon"<sup>4</sup> is substantially a translation of a work of the Salernitan Petrocello (*floruit 1050*).<sup>5</sup> The short text that we here discuss has perhaps similar Salernitan relationships, but the MS. in which it is found is about a century earlier than that of either the "Compendium" or the "Peri Didaxeon."

The text in question is to be found in the

<sup>3</sup> Giovanni Monaco was a pupil of Constantine the African (died 1087). A work by Giovanni is printed by S. de Renzi: "Collectio Salernitana," Naples, 5 vols, 1852-56, Vol. ii, p. 144.

<sup>4</sup> The "Peri Didaxeon" (*περι διδάξεων* = of the schools of medicine) exists in only one MS., viz., British Museum, Harley 6258 fo. 83v to 98r. The work is printed by O. Cockayne: "Leechdoms, Wortcunning and Star Craft in Early England," London, 3 vols, 1864-66. Vol. iii, p. 82. The text of the "Peri Didaxeon" was restudied by Max Löwenack in the "Erlanger Beiträge zur englischen Philologie," No. XII, Erlangen, 1896. The conclusions of Löwenack are summarized by J. F. Payne: "English Medicine in the Anglo-Saxon Times," Oxford, 1894. The MS. of the "Peri Didaxeon" is of the early twelfth century.

<sup>5</sup> The work of Petrocello is printed by S. de Renzi, loc. cit., Vol. iv, p. 185.

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Bodleian Library at Oxford in the oldest volume of the collection of Elias Ashmole,<sup>6</sup> a group of books that is of unique value for the study of mediæval medicine. It is possible to date the MS. accurately on internal evidence. It is all in the same handwriting, contains numerous astronomical

partly in Latin and partly in Anglo-Saxon, is known as the "Handboc of Byrhtferð." This author's name is several times mentioned in the text and at one place we are told that it is his work. The title *handboc* occurs in another passage where we read:

"We gesetton on þissum encheiridion

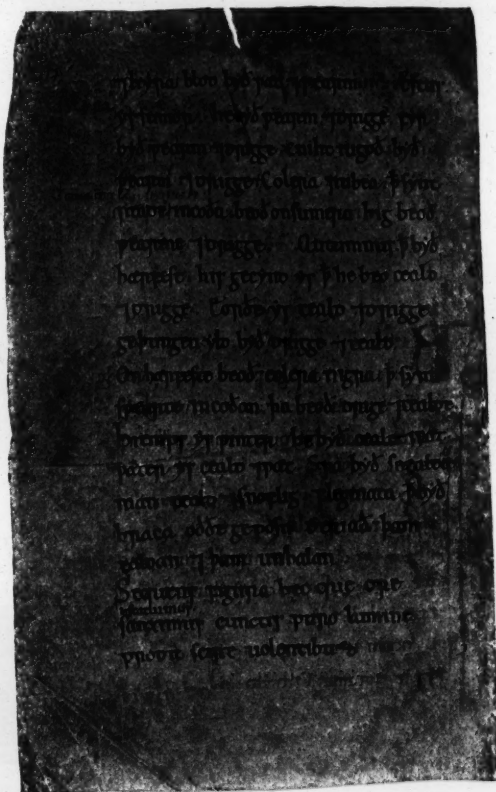
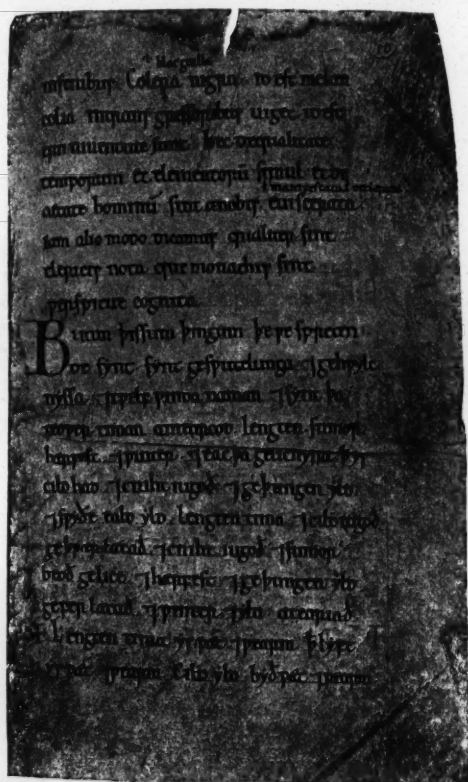


Fig. 1. Pages 10 and 11 of Byrhtferð's Handboc. From the MS. in the Bodleian Library, Ashmole 328, written in the year 1011.

data and, by a calculation therefrom that we need not here reproduce, the actual year in which it was written has been determined as 1011.<sup>7</sup> Our MS., which is

paet ys manualis on lyden handboc on englisc" which may be translated:

"We set down this encheiridion, that is *manual* in Latin and *handbook* in English."<sup>9</sup> matics. Following on this are three tractates on "The Ages of the World," "The Loosing of Satan," and "The Seven Deadly Sins."

<sup>9</sup> Page 133. The Handboc is not numbered in folios, as is usual with MSS., but in pages like a modern book.

<sup>6</sup> The press mark is Ashmole, 328.

<sup>7</sup> K. M. Klassen: "Ueber das Leben und die Schriften Byrhtferðs," Dresden, 1896, p. 18.

<sup>8</sup> The main part of the Handboc is occupied by a scientific treatise on the calendar and on mathe-

The Greek word *encheiridion* is commonly encountered in Anglo-Saxon works and is used to describe a treatise of any kind.<sup>10</sup> It does not seem especially confined to short works and thus resembles the modern German *Handbuch*. We find the word in the writings of Bede, King Alfred and Alcuin.

Of Byrhtferð little is known. He was a monk of Ramsey in Huntingdonshire and he lived during the reign of Aethelred (reigned 979-1016). The literary output of Byrhtferð included commentaries on the writings of Bede. One of these commentaries is on the "De temporum ratione,"<sup>11</sup> a work dealing mainly with the divisions of time as deduced from astronomical data and largely occupied with the fixation, by such means, of the Church festivals. The Handboc of Byrhtferð contains very similar material and includes sections on the concurrents,

the regulares, the epacts, the qualities of the twelve months, the moon, the sun, the stars and the seasons, the calculation of Easter, the "secrets of numbers" and the "ages of the world" of a like character to the material on these subjects encountered in various works of Bede.<sup>12</sup> With this material as a whole we are not here concerned, except to point out that in these early writings *medicine* forms but a part of *physica*, that is of natural knowledge in general; and that the history of early as of later medicine can only be truly presented as a part of the general philosophical system in which it arose.

The medical text that we are discussing opens in Latin and is followed by a version in Anglo-Saxon. After the Anglo-Saxon portion there is, or rather *was*, a diagram illustrating the text. The page containing this diagram has been torn out and only a frag-

<sup>10</sup> The word *encheiridion* occurs however in the "Etymlogiæ" of Isidore (iv, 11) as a term for a knife or surgical instrument.

<sup>11</sup> Besides the Handboc and the commentary on Bede's "De temporum ratione," Byrhtferð wrote a commentary on Bede's "De natura rerum," two works entitled "De principiis mathematicis" and "De institutione monachorum," together with a small unpublished "Præmium super Bedam de temporibus." This last is in MS., St. John's College, Oxford, 17, fo. 12v-13r.

<sup>12</sup> We here give a bibliography of the more important publications in which there is mention of Byrhtferð.

John Bale: "Scriptorum illustrium Majoris Britanniae quam nunc Angliam et Scotiam vocant Catalogus," Basle, 1559, cent. ii, cap. 35, p. 238 (not in the first edition, Ipswich, 1548).

John Pits: "Relationum historicarum de rebus anglicis," Paris, 1619, Vol. i, p. 177-8.

G. Somner: "Dictionarium saxonico-latino-anglicum," Oxford, 1659.

Jean Mabillon: "Acta sanctorum ordinis Benedicti," Paris, 1668-1705, Vol. v, p. 715.

C. D. Du Cange: "Glossarium ad scriptores mediæ et infimæ latinitatis," Paris, 1678, in course of "Index Auctorum," p. 45.

Henry Wharton: "Anglia sacra," London, 1691, Vol. ii, preface, p. 9.

Humphrey Wanley in G. Hickes: "Linguarum vett. septentrionalium Thesaurus," Oxford, 1705, p. 103.

J. Leland (lived 1506-52): "De scriptoribus britannicis," ed. Ant. Hall, Oxford, 1709, cap. 136.

J. Leland: "De rebus britannicis Collectanea," edited by Hearne, Oxford, 1715, Vol. iv., p. 23 (describing a MS. in Peterhouse, Cambridge), and Vol. iv., p. 97 (describing an ancient MS. shown to him by Talbot).

T. Hearne: in "Glossary" attached to Peter Langtoft's "Chronicle," Oxford, 1725, Vol. ii, pp. 661, 670.

J. G. ab Eckhart: "Commentarii de rebus Franciæ orientalis et episcopatus, wirceburgensis," Wurtzburg, 1729.

J. A. Fabricius: "Bibliotheca latina mediæ et infimæ Latinitatis," Hamburg, 1734, Tom. 2 (continuous pagination with Tom. 1), pp. 500, 763, 764.

T. Tanner: "Bibliotheca britannico-hibernica," London, 1758, pp. 30 and 125.

F. Kluge in "Anglia, Zeitschrift für englische Philologie, von R. Paul Wülker, herausgegeben," Halle, 1885, Vol. viii, pp. 298-337.

Karl Moritz Klassen: "Ueber das Leben und die Schriften Byrhtferðs," Dresden, 1896.

Frank Clifton Smith: "Die Sprache der Handboc Byrhtferðs und des Brief-Fragmentes eines unbekannten Verfassers," Leipzig, 1905.

ment remains. We are fortunate in being able to replace the substance of the lost page from another source, for the diagram was copied by an English scribe early in the twelfth century and has survived in another MS.<sup>13</sup> The diagram that has thus by a lucky chance come down to us provides interesting illustration of how, among the Anglo-Saxons, Greek science which in its Eastern home had already been modified by a peculiar type of biblical exegesis, was on its arrival on these shores again modified by the Teutonic tradition. (Fig. 2.)

The system encountered in the Handboc of writing paragraphs alternately in the vernacular and in Latin is extremely common in Anglo-Saxon literature. Sometimes the Latin continues the thought of the Anglo-Saxon, and verses are actually in existence with the lines divided into two parts, the former half being Anglo-Saxon, the latter Latin, with the same alliteration running through the line.<sup>14</sup> In other cases the Anglo-Saxon paragraphs represent a version of the Latin, and then it may be hard to tell which is the original. In the latest period of Anglo-Saxon writing, the twelfth century, it is probable that the Latin was intended to assist the reader in understanding the Anglo-Saxon, since the latter language had now been replaced by Middle English as a vernacular and was preserved only as a literary medium. It is less easy to explain the alternation of the two languages in the earlier MSS. In some cases it may have been used for teaching Latin, in others to guard the reader against trans-

lators' errors, in yet others the result may have been produced by an unintelligent scribe copying a Latin original that had been glossed in Anglo-Saxon. In the text before us there can, we think, be no doubt that Byrhtferð had before him a Latin MS. from which he extracted a paragraph and then translated it into Anglo-Saxon.

## THE TEXT

MS. Ashmole 328

Exceptis his rebus de quibus page 8.*id est locuti* *id est tacunga*

orsi sumus sunt significationes sunt

*id est gehwylenyssa* *id est grece*

qualitantes sunt duo denorum nomina

onomata

uenturum sunt loca bisbinorum. tempo- page 9.

rum ueris. aestatis. autumn. et hiemis

et qualitantes. uel aetates hominum.

*id est* pueritia adolescentia iuuentus et

senectus ✚ Uer et pueritia consenti-

unt. Adolescentia et estas. assimilantur.

autumnus et iuuentus. consociantur.

Hiems et senectus deficiunt ✚ Uer

humidum et calidum. Aer humidus et

calidus. pueritia. humidia et calida.

Sanguis qui in pueris pollet. humidus

et calidus est ✚ Aestas calida. et sicca.

ignis calidus et siccus. Adolescenta calida

*scilicet in estate*

et sicca. Colera rubia crescunt in iue-

nibus<sup>15</sup> calida et sicca ✚ Autumnus siccus

et frigidus. Terra sicca et frigida. Iu-

uentus sicca et frigida. Colera nigra

in autumnno crescunt sicca et frigida sunt.

✚ Hiemps frigidus et humidus. Aqua

frigida et humida flegmata dominantur

*id est* blac geallain senibus. Colera nigra. *id est* melancolia intrans gressoribus uiget. *id est*

qui iuuentute sunt. Hec de qualitate

temporum et elementorum simul et de

*uel manifestata uel declarata.*page 10

<sup>13</sup> MS. 17 in the Library of St. John's College, Oxford. The proof that this MS. really contains a copy of the missing page of Byrhtferð is given in an article by Charles and Dorothea Singer "Byrhtferð's Diagram" in the *Bodleian Quarterly Record*, Vol. ii, p. 47, Oxford, 1917.

<sup>14</sup> This curious freak occurs in the eleven terminal lines of the poem known as "The Phoenix," attributed to Cynewulf, which forms a part of the so-called Exeter book, a MS. presented to Exeter Cathedral by Archbishop Leofric about 1071 A.D.

<sup>15</sup> The scribe should here have written *adolescentibus* instead of *iuuenibus*. The gloss is correct, the error being in the text alone.



ætate hominum sint a nobis. euiscerata  
iam alio modo dicamus qualiter sint  
clericis nota que monachis sint  
perspicue cognita.

Butan þissum þingum þe we sprecen-  
de synt. synt gescpulelunga 7 gehwylc-  
nyssa. 7 twelf winda naman. 7 synt þa  
fewer timan amearcod. lengten. sumor.  
hærfest. 7 winter. 7 eac þa gelicnyssa. þæt ys.  
cildhad. 7 cnihtiugoð. 7 geþungen yld.  
7 swyðe eald yld. lengten tima. 7 cildiugoð  
geþwærlacað. 7 cnihtiugoð. 7 sumor  
beoð gelice. 7 hærfest. 7 geþungen yld  
geferlæcað. 7 winter. 7 yld. ateorlað.

✠ Lengten tima ys wæt. 7 wearm. þæt lyft  
ys wæt 7 wearm. Cild yld byð wæt 7 wearm.

page 11

7 hyra blod byð wæt 7 wearm. Æstas  
ys sumor. he byð wearm 7 drigge. fyr  
byð wearm 7 drigge. cnihtiugoð. byð  
wearm 7 drigge. Colera rubea. þæt synt  
reade incoða. beoð onsumera hig beoð  
wearme 7 drigge. Autumnus þæt byð  
hærfest. his gecynd ys þæt he beo ceald  
7 drigge. Eorðe ys ceald 7 drigge.  
geþungen yld byð drigge 7 ceald.  
On hærfeste beoð colera nigra. þæt synt  
swearte incoðan. þa beoð drige 7 cealde.  
Hiemps ys winter he byð ceald 7 wæt.  
water ys ceald 7 wæt. Swa byð se ealda  
man ceald 7 snoffig. flegmata. þæt byð  
hraca oððe geposu. deriað þam  
ealdan þam unhalan.

Sequens figura haec quae ore  
id est statuimus  
sanximus cunctis puro lumine  
profit scire uolentibus.

The substance of this passage was the

<sup>16</sup> The text occurs in a marginal note in the Treves MS., No. 40, fo. 30 r. This note is substantially contemporary with the MS. (late tenth century) on which it is written. The MS. itself is of interest as containing much old High German magic, and has been discussed by E. Schroeder, *Zeit. f. deutsche Altertumswissenschaft*, 1910, p. 169 and 396. The medical marginalia are printed by C. Ferckel in the *Arch. f. Gesch. d. Med.*, 1914, Vol. vii, p. 129. Our particular text is the latter part of the "Inventiones

common basis of the medical system of the Dark Ages.

The Latin version of the text was known in Northern Europe even before the time of Byrhtferð, for it is found in a Rhenish MS. of the latter part of the tenth century.<sup>16</sup> It is almost verbally identical with a passage in a pseudonymous work known as the "Isagoge Sorani Ephesii,"<sup>17</sup> from which it was probably borrowed. That compilation we believe to be of Salernitan origin and if this be the case, the "Isagoge" would be the earliest Salernitan medical textbook that has survived.

#### TRANSLATION FROM THE ANGLO-SAXON

"Besides these things of which we have spoken there are the signs and the characters and the twelve wind-names. And there are the four destined [amearcod = marked off, designated] seasons, spring, summer, autumn and winter, and eke those things which are after their likeness, that is to say childhood and youth [cniht iugoð = knight-youth] and manhood [ge-þungen yld = waxen age] and very old age.

Springtime and childhood [cild iugoð] agree, and youth and summer are alike, and autumn and manhood are companions, and winter and age [both] decline.

Springtime is wet and warm. The air is wet and warm. Childhood is wet and warm and the blood thereof is wet and warm.

Aestas is summer. It is warm and dry. Fire is warm and dry. Youth is warm and dry. Colera rubea, those are red humours

atque precepta Hypocratis medici," printed on p. 137 of that volume.

<sup>17</sup> The "Isagoge" of pseudo-Soranus has only twice been printed; in (a) the "Collectio de re medica" of Albanus Torinus, Basle, 1528 and in (b) the beautiful Aldine volume "Medici antiqui omnes qui latinis litteris diversorum morborum genera et remedia persecuti sunt." We know of no MS. of the "Isagoge."

[incoða],<sup>18</sup> cold and dry.

Autumnus [gecynd = born] Earth is cold. In autumn are black cold and dry and cold. Hiemps Water is cold and cold, or colds, infirm—[deriað] (deriað) t

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<sup>18</sup> Th  
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[*incoða*],<sup>18</sup> occur in summer. They are warm and dry.

Autumn that is harvest, its nature [*gecynd*=kind] is that it is cold and dry. Earth is cold and dry. Manhood is dry and cold. In autumn occur *colera nigra*, those are black humours [*incoða*], they are dry and cold.

Hiemps is winter. It is cold and wet. Water is cold and wet, so is the old man cold and snivelling. Phlegms, that is coughs or colds, are the diseases of the old and the infirm—[literally, *injure* or *affect injuriously* (*deriað*) *the old and infirm*].”

#### THE GLOSSES

The following passage is rendered from the sentence at the end of the Latin text: “These things concerning the character of the seasons and elements as well as concerning the age[s] of man have been extracted by us. Now we will declare by another method [i.e., by the use of the vernacular] how those things may be known to scholars [*clericis*] which are clearly grasped by monks [*monachis*].”

At the end of the Anglo-Saxon text is a Latin sentence which may be translated thus: “The following figure which we have drawn up by request sets forth these things in a clear light to all who wish to know.”

In the Latin portion of the text there are several glosses, perhaps by the same hand as the MS. itself. These suggest that the glossator who needed such explanations was imperfectly acquainted with Latin. Thus he gives the following explanations:

*orsi* id est *locuti*

*qualitantes* id est *gehwylenysa*

*colera nigra* id est *blac gealla* [black gall]

*eviscerata* vel *manifestata* vel *declarata*

*sanximus* id est *statuimus*

<sup>18</sup> The word *incoðu* or *incoðan* is usually a generic term for disease. Here and above we have translated it *humour*, the supposed cause of the disease. The meaning here is obviously *gealla*, gall or bile, as given in the gloss to the Latin version.

There are two other glosses that merit some attention and that we may discuss briefly:

#### (1) *significationes id est tacnunga*

The word *tacnunga* means a sign or explanation and is derived from the verb *tacnian* to show, explain or point out, modern English *token* and *teach*. To the philosophers of the Dark Ages and, indeed, till a much later time, phenomena were not studied or recorded for their own sake, but because of their *tacnunga*, their teaching or significance; that is, for the meaning that they were thought to bear in the scheme of things. This point of view colors the whole of mediæval science. Phenomena interested our forbears not so much as leading to conclusions but as illustrating doctrine. This fact provides the explanation of many of the misunderstandings and misinterpretations of phenomena on the part of the men of the Middle Ages that have proved so puzzling to modern explorers of their writings.

#### (2) *nomina id est grece onomata*

It is interesting to find a Greek term used in illustration of a Latin word. This is not a very rare event in Early English scientific writings. In the present case it is with the names of the winds that the Greek word *onomata* is equated. This is part of a much wider attempt to adjust the special Greek names of the winds to the cardinal points. The Greeks, though they recognized the four cardinal points, did not at first place the winds in systematic relation to them. This was rather a Latin device, and the Romans arranged the winds in four sets of three, each set in relation to one of the cardinal points. Anglo-Saxon like the other Nordic languages though without special names for the winds called them only according to their relation to the cardinal points. Wind names or *onomata* were therefore borrowed by the learned from Greek, probably through the Latin of

Bede, who took them from Isidore, who, in turn, derived them from Pliny. The Latin languages have returned the compliment by borrowing the names of the cardinal points from the Teutonic. The Greek names for the winds did not retain their hold and have long passed from the vernacular, if they ever truly entered it, but the Teutonic names for the points of the compass are still in use all over Europe both in the Latin and the Nordic languages. Our MS., however, is a learned product, and its author naturally uses for the winds the Greek names which he took from Bede rather than the terms commonly employed by the people.<sup>19</sup>

#### THE DIAGRAM

The diagram missing from the Byrhtferð MS. summed up the physical theories of its author. We reproduce this diagram from another source and have added a Latin key and a simplified English version. (Figs. 2, 3 and 4.) In the latter the scheme is reduced to its ultimate essentials. The legend which is written around the diagram is as follows:

Hanc figuram edidit bryhtferð monachus ramesiensis cenobii de concordia mensium atque elementorum.

Hi sunt solares menses [gloss=sic denominantur quia secundum ipsius cursum constant] qui habent dies. xxxi. Ianuarius

<sup>19</sup> Bede: "De Natura Rerum," ch. 27, gives the Greek names of the winds. He probably borrowed them from Isidore (Etymologiarum, Vol. xiii, p. 11) who had the scheme from Pliny (Nat. Hist., II, 46ff.). The same scheme is encountered in Seneca (Quaest. Nat., V, 16), Johannes Lydus (De Neuribus, IV, 119), and in the Peripatetic writings (Meteorologica, De ventorum situ et appellatione, and De Mundo). The Anglo-Saxon names for the winds with their supposed Latin or Greek equivalents are found in glosses from the eighth century onward, and are printed in Thomas Wright's "Anglo-Saxon and Early English Vocabularies," edited by R. C. Wülcker, 2 Vols., London, 1884, p. 36.

Martius Maius Iulius Augustus October December.

Hi autem. xxx. [gloss=sic dies habent secundum solis cursum] Aprilis Iunius September November. Februarius uero ab omnibus erat.

Retinet haec figura. xii. signa. et duo solstitia. atque bina equinoctia. et bis bina tempora anni. in qua descripta sunt. iii. nomina elementorum. et duodenorum uentorum onomata atque iiii etates hominum. Sunt insimul coniuncta bis binae litterae nominis protoplastis adae.

Demonstrat enim uero quales menses lunas. xxx. quales xxix habent.

Translation: "Byrhtferð, a monk of the monastery of Ramsey, composed this figure of the concord of the months and of the elements.

"These are the solar months (gloss—they are so called because they accord with the course of the sun) which have thirty-one days: January, March, May, July, August, October, December.

"But these thirty (gloss—they have this number of days according to the course of the sun) April, June, September, November; but February differs from all.

"This figure exhibits the twelve signs [of the Zodiac] and the two solstices and the two equinoxes and the four seasons of the year; and there are designated therein the four names of the elements and the titles of the twelve winds and the four ages of man. And, moreover, these are conjoined with the four letters of the name of Adam the first created. Furthermore, it shows which months have thirty moons and which have twenty-nine."

Turning to the details of the diagram itself, we may note first that it has the usual mediæval arrangement of the East at the top instead of the North as in our modern system. The diagram is bounded by a curve divided into three bands or layers. The outside band gives the twelve signs of the zodiac. Within this are ranged the solar months



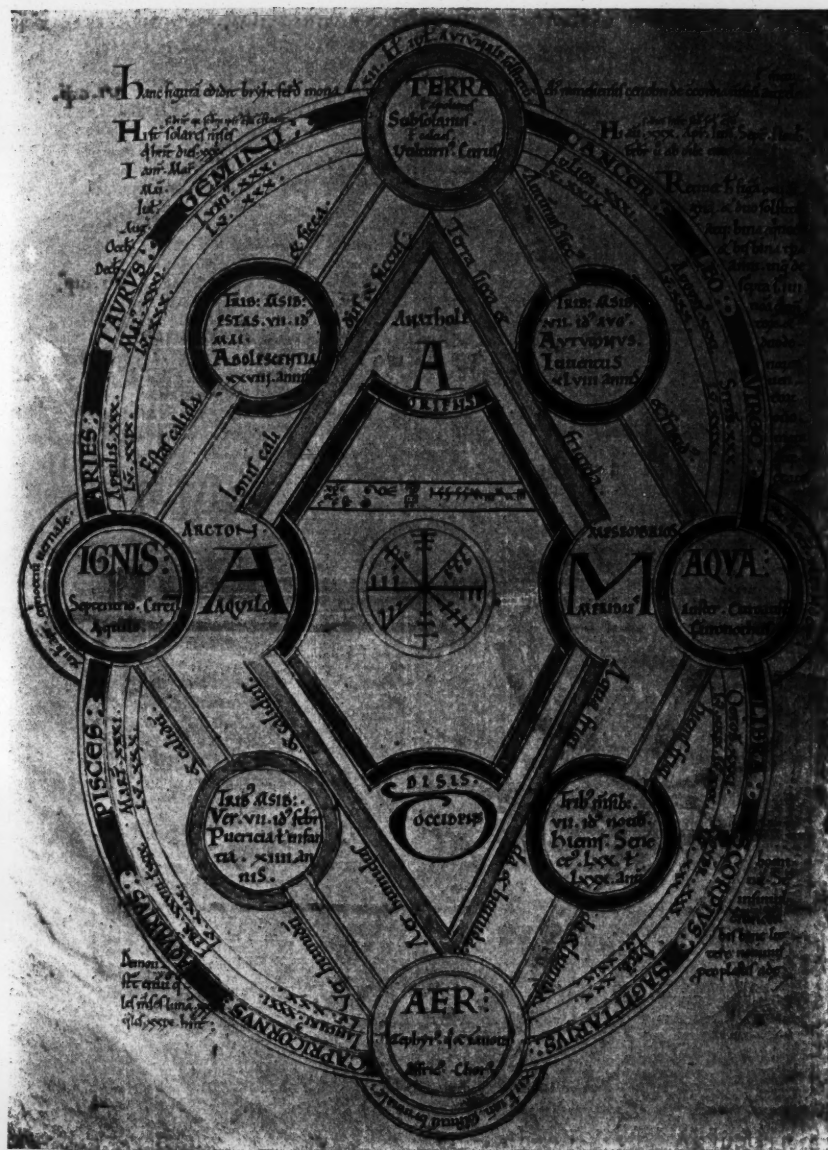


Fig. 2. Byrhtferð's diagram of the physical and physiological fours supplied from MS. 17 of St. John's College, Oxford, written in the year 1110.

with a note as to the number of days in each and arranged so that each month corresponds to its zodiacal sign. The inmost band of the curve shows the supposed relation of the months to the movements of the moon and merits a few words of explanation. It represents the *Dionysian cycle*,<sup>20</sup> which was invented in the sixth century and was

nine and thirty days alternately. An intercalary month of thirty days was inserted seven times in nineteen years. This calendar, which was adopted at the Council of Whitby in 664, has no practical value except for the calculation of Easter, a subject of the keenest controversy in the English church at that period.

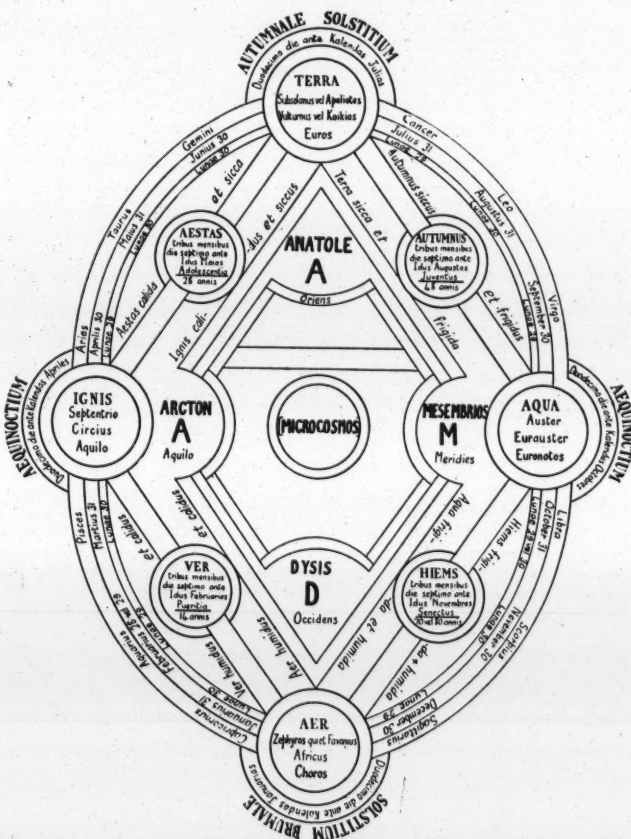


Fig. 3. A simplified key to Byrhtferd's diagram.

given a wide popularity by Bede. In this cycle a use was made of artificial lunar months, the length of each of which depended on the date when it began in the solar year. These months were given twenty-

<sup>20</sup> So called from its inventor Dionysius, a Scythian monk of Monte Cassino, who evolved it about 525 A.D. His object was to homologize the Eastern and Western date of Easter.

The curve which forms the outer rim of the diagram is interrupted at four points by semicircles within which are written the date of the equinoxes and of the solstices. A table of these and of the seasons as defined by the diagram is as follows:

Winter Solstice = Duodecimo (die ante) Calendas  
Januarias = Dec. 21st.

Spring Equinox = Duodecimo (die ante) Calendas  
 Apriles = March 21st.  
 Summer Solstice = Duodecimo (die ante) Calendas  
 Julias = June 20th.  
 Autumn Equinox = Duodecimo (die ante) Calendas  
 Octobres = Sept. 20th.  
 Spring begins, (Die) septimo (ante) Idus Februarias  
 = Feb. 7th.

At the four points of interruption of the outer curve, as though forming the basis of the whole, are circles indicating the four elements, Earth, Air, Fire and Water, with each of which are associated three wind names, grouped according to the cardinal points. Within the curved bands of the

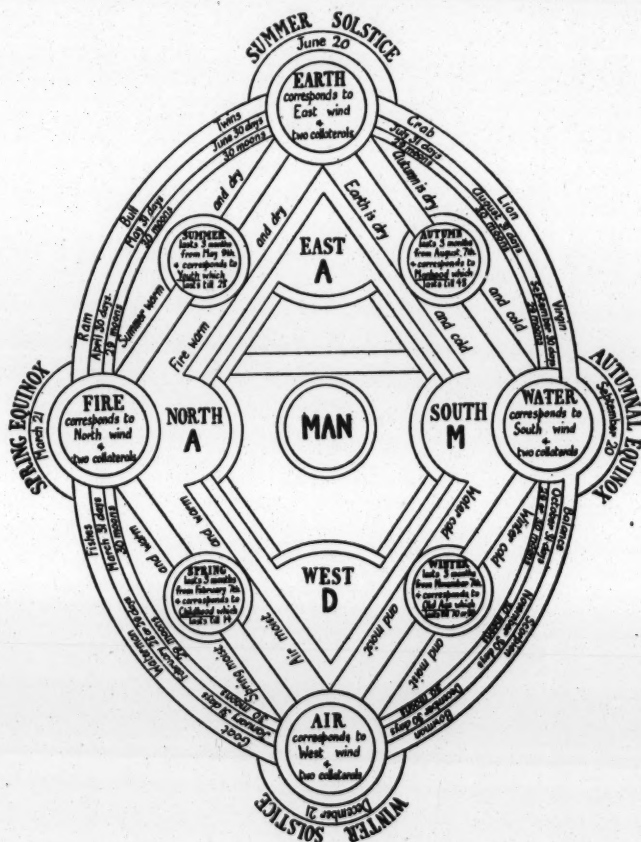


Fig. 4. English translation of the essential factors in Byrhtferð's diagram.

Summer begins, (Die) septimo (ante) Idus Maias = May 9th.  
 Autumn begins, (Die) septimo (ante) Idus Augustas = Aug. 7th.  
 Winter begins, (Die) septimo (ante) Idus Novembres = Nov. 7th.

This division of the year, which is somewhat different from our modern reckoning, corresponds with the views of Bede.

figure are diagonal lines indicating the seasons and their *qualities*, hotness and coldness, dryness and moisture, each season being ranged within the appropriate months, and the qualities, like the *elements*, being set forth according to the usual Aristotelian tradition. These diagonal lines are also interrupted by circles showing the duration



(three months) and the date of commencement of each of the four seasons, together with the corresponding four Ages of Man. From it we learn that man's life may be thus divided:

Spring = Childhood, i.e. to 14 years, is Moist and Warm.

Summer = Youth, i.e. to 28 years, is Dry and Warm.

Autumn = Manhood, i.e. to 48 years, is Dry and Cold.

Winter = Old age, i.e. to 70 or 80 years, is Moist and Cold.

Within the outer diagonal bands are inner diagonal bands showing similar qualities for the four elements. Related to these again are the four points of the compass, arranged to illustrate the "four letters of the name of the protoplast Adam."

|   |            |          |       |
|---|------------|----------|-------|
| A | Anathole   | Oriens   | East  |
| D | Disis      | Occidens | West  |
| A | Arcton     | Aquilo   | North |
| M | Mesembrios | Meridies | South |

We will not here attempt to trace fully this elaborate custom of associating what we have called *the physical and physiological fours*. We may, however, make some remarks on the development of the conception.

The earliest division of the ages of man is not into four but into seven, and in this form it appears in the pre-Hippocratic treatise, *περὶ ἐβδομαδῶν*. Hippocrates himself in the "Aphorisms" (III 18) has a triple division, *παῖδες, μέσοι* and *γέροντες*. Nevertheless, in his "De victus ratione" (I, 33) there appears a fourfold division connected with the four elementary qualities thus:

- |                      |                 |
|----------------------|-----------------|
| (1) <i>παῖς</i>      | warm and moist. |
| (2) <i>νεανίσκος</i> | warm and dry.   |
| (3) <i>ἀνὴρ</i>      | cold and dry.   |
| (4) <i>πρεσβύτης</i> | cold and moist. |

So also in the Hippocratic "De natura hominis" (VII) these qualities are applied to the seasons and the humours thus:

Blood is warm and moist and dominates in spring.

Yellow bile is warm and dry and dominates in summer.

Black bile is cold and dry and dominates in autumn.

Phlegm is cold and moist and dominates in winter.

Galen, commenting on this work, observes<sup>21</sup> that Hippocrates has omitted to make the corresponding fourfold division of ages, so he does it himself thus:

|        |                   |                |              |
|--------|-------------------|----------------|--------------|
| Spring | <i>παιδίον</i>    | warm and moist | blood.       |
| Summer | <i>ἀκμάζων</i>    | warm and dry   | yellow bile. |
| Autumn | <i>παρακμάζων</i> | cold and dry   | black bile.  |
| Winter | <i>γέρων</i>      | cold and moist | phlegm.      |

To this grouping, some of the later MSS. of Galen add the four elements, earth, fire, air and water. The table thus elaborated became part of the "Galenic System," though rarely used by Galen himself. The chief notices of it are in the spurious Galenic treatises, "Medical Definitions" and "On the Work of Hippocrates concerning Humours."

When the division of the signs of the zodiac into four groups was first made, we are unable to say, but it appears fully developed in the astrological works of Manilius (first century, A.D., perhaps in its first decade).

The four cardinal winds we have already pointed out are more a Latin than a Greek development. They appear, however, in a work attributed to Galen<sup>22</sup> but regarded as a late Byzantine product.

There yet remain unexplained two factors in the diagram, namely, the signs in the central circle and those in the transverse bar above it. The central circle of the diagram appears to represent the division of time of the Anglo-Saxon sundial. On that instrument the day of 24 hours was divided into eight *tides*. Each of these tides consisted of three hours of our present notation or two *stundr* of the Nordic reckoning. This system was common to Northern Europe and only gradually gave way to the duodecimal system which has since become universal, but which was very early in vogue

<sup>21</sup> Kühn's edition, Vol. xv, p. 186.

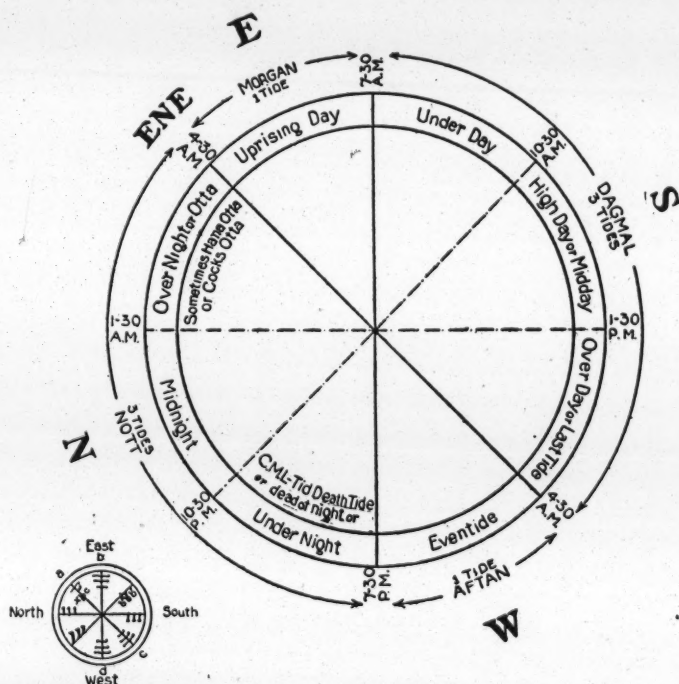
<sup>22</sup> *εἰς τὸ περὶ χυμῶν Ἱπποκράτους ὑπομνήματα*.

in Southern Europe. We append (Fig. 5) a diagram of the Teutonic sundial.<sup>23</sup>

The horizontal bar above the central circle shows the name of Christ [ $\chi\rho(\iota\sigma\tau\omicron)s$ ] and certain signs together with a linear in-

scription which appears to be an Irish ogham. This ogham, if such it be, cannot be read intelligibly nor can we interpret the remaining signs.

The general scheme of the physical and



BYRHTFERÐ DIAGRAM

Fig. 5. The Teutonic sundial from details kindly supplied by Father John Fletcher.

Day-Night was divided into four divisions and eight tides. The divisions were: Morgan, 1 tide; Dagmal, 3 tides; Efen, 1 tide; Nott, 3 tides. Each tide (=three hours of modern notation) was divided into two *stundr* and the first tide began when the sun was ENE i.e., 4.30 A.M. In the inset Byrhtferð's circle the orientation is not quite the same, the first tide, marked  $\chi\rho s$ , begins NE instead of ENE. This disorientation was needed for the "concord" of the physical and physiological fours which the diagram seeks to demonstrate. The Greek letters  $\chi\rho s$  have taken the place of the runic letters which in the original Teutonic sundials marked the division between Day and Night. The letters b.b.b. on the SE radius of Byrhtferð's circle stand perhaps for *ter beatus*, thrice blessed, and perhaps mark the performance of Mass which was, however, usually at 9 A.M. Otherwise Byrhtferð's divisions follow the usual scheme of the sundial: a-b = Morgan, b-c = Dagmal, c-d = Efen, d-a = Nott.

<sup>23</sup> We have encountered a diagram identical with the central circle of Byrhtferð's figure in a tenth century calendar of Anglo-Saxon workmanship in the British Museum. Cotton Julius, A vi, fo. 10 v.

In this MS. the circle is associated with several Byzantine symbols and on the following page (fo. 11 r) is the name of God, in Greek and Hebrew, together with several Greek words, e.g., "fos = lux."

physiological fours as presented in this complex form in our MS. was described in outline by Isidore of Seville (570-636) and by Bede (672-735).<sup>24</sup> It underwent all sorts of elaboration right down to the seventeenth century. The actual diagram before us represents its specifically Anglo-Saxon development.

#### CONCLUSIONS

We would lay some stress on the diagram accompanying our text or rather on the formula which it represents. It is one of the few passages in the scanty Anglo-Saxon medical literature which give us an insight into the theories on which the minds of the early English *physici* were working. These theories were Greek in origin and the presence of this Greek element separates such writings from a yet earlier stratum in which the point of view remains truly Teutonic and barbarian. We have shown that, in spite of the profound Greek influence, certain primitive Anglo-Saxon elements survive in the Byrhtferð diagram of the physical and physiological fours. The formula of the diagram is of wider interest than to the special student of Anglo-Saxon literature, since the comprehension of the theory on which it is based is necessary to anyone who seeks to understand mediæval science and especially pre-scholastic medicine.

The figure exhibits to perfection the fundamental doctrine of the *interrelation of macrocosm and microcosm*, a theory which may be followed as a guiding thread through

the bewildering labyrinth of mediæval science. This doctrine, whether frank and open, as in many Neoplatonic writings and in the document before us, or whether allegorized, overlaid and developed, as in much of the later Arabian and scholastic literature, was yet ever present in the minds of such mediæval writers as concerned themselves with natural phenomena. These men were imbued with ideas inherited perhaps from the Stoic school of philosophy and interpreted by a simplified Greek astrology under the syncretic influence of the Hermetic writings. To them the principle of *universal solidarity*, that is of the interrelation of all parts of the universe and their mutual interdependence, was the ruling motive of *philosophia naturalis*. They considered that ancient authority, both divine and profane, had provided them with a key to the structure of the great outer universe. With this key they believed themselves able to unlock also the secrets of the lesser inner world. Thus the investigation of the details of the human mechanism came to be regarded as superfluous or even misleading, since the necessarily partial character of such an enquiry might lead to misrepresentation of that great whole towards the comprehension of which every mind must strive. Anatomy and physiology were, therefore, altogether neglected or rather replaced by such mnemonic systems as that before us. At times the theologians, seeking to demonstrate the direct influence of God upon his world, would break through the charmed circle of universal solidarity. At other times again, the theory of macrocosm and microcosm was given a Christological interpretation by mystical writers, more or less unconsciously under neo-Platonic influence. In the main, however, this view of the interdependence of man and his world held its own in the Dark Ages, and persisted little changed, right through the period of scholasticism and of the Arabian revival, on through the Renaissance, and down to the

<sup>24</sup> The simpler scheme suggested by Isidore and Bede is also reproduced in St. John's College, Oxford, MS. 17, fo. 39 v. An early example of a graphic expression of this scheme is encountered in a document of French workmanship in rustic capitals, dating from not later than the ninth century, Bibliothèque nationale MS., lat. 5543, fo. 136 v. This figure is reproduced by Charles Singer: "Studies in the History and Method of Science," Oxford, 1917, Plate xiv.

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time when the human intellect was relieved from its long thralldom to ancient philosophy by the rise of the experimental method.

The innermost part of the diagram is intended to portray the prototype of man, Adam, the protoplast, the first created. In certain other similar early schemes the outermost part of the diagram suggests

either actually or allegorically Him in whose image man was made. It was thus intended to suggest that just as we may know something of God, the Creator, from the world that he has wrought, so by a knowledge of that world there is revealed to us something of the nature of man the creature.<sup>25</sup>

<sup>25</sup> We have to thank several friends for help with this article: Dr. J. K. Fotheringham has supplied us with information for the interpretation of the Calendar. Father John Fletcher has drawn our attention to the Anglo-Saxon sundial and

has provided Fig. 5 and its legend. Mr. W. H. Stevenson has given us suggestions as to the passage of the names for the four cardinal points into the European languages and Dr. E. T. Withington has contributed towards our estimate of the genealogy of the physical and physiological fours.



# THE FIRST SCIENTIFIC WORK ON SPECTACLES

By CASEY A. WOOD, M. D.

CHICAGO, ILL.

**A**BOUT six years ago the Library of the Surgeon General of the Army, through the courtesy of the late Dr. Mortimer Frank, acquired a copy of Daga de Valdez's work on spectacles. This small, octavo volume, published at Seville by Diego Perez in 1623, an illustrated book of 199 (99½ double) pages, is replete with interest. In the first instance, it is an extremely rare work; very few copies are known and the officials of the Surgeon General's Library have been unable to trace the public sale of a single one. In the second instance, the monograph is interesting because it is the first scientific work on the subject under treatment; and, finally, its publication throws some light on the status of scientific works and workers in the Spain of the early seventeenth century.

The title page, as shown by the accompanying photograph, tells us that the book is written on the use of spectacles for every kind of sight with lessons on the varieties of visual defects for those who need some special kind of spectacles; it also shows the time of life when certain glasses are most useful, how they may be prescribed; it also discusses other means for utilizing and preserving the eyesight.

This monograph<sup>1</sup> was written by Benito Daga de Valdez, notary of the Holy Office (Inquisition) in the City of Seville. It is dedicated to our Lady of the Holy Fountain of the City of Cordova. The title page is decorated by a pair of spectacle frames, from which stream light rays coming

<sup>1</sup>Hirschberg (Geschichte der Augenheilkunde, 1908, 2 Ed. ii, 280,) mentions the Valdez monograph; and there is a translation or (rather) transliteration, 1892, by Albertotti of a French Codex of 1627. See, also, Garrison's "History of Medicine," 1917. 2 Ed.

from the right eye hole, filled by the sun; from the left, occupied by the moon. The margins of these illustrations show various ophthalmic symbols. The *con privilegio* is placed above the date and the publisher's name.

V S O

## DE LOS ANTOIOS

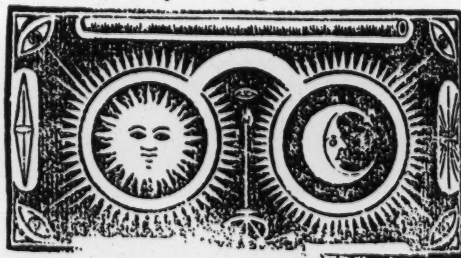
PARA TODO GENERO DE VISTAS.

En que se enseña a conocer los grados que a cada vno le faltan de su vista, y los que tienen qualesquier antojos.

Y ASSI MISMO AQUE TIEMPO SE AN de usar, y como se pedirán en ausencia, con otros auisos importantes, a la utilidad y conseruacion de la vista.

PORELL BENITO DAGA DE VALDES,  
Notario de el Santo Oficio de la Ciudad de Sevilla.

DEDICADO A NUESTRA SEÑORA  
de la Fuente de la Ciudad de Cordova.



CON PRIVILEGIO

Impreso en Sevilla por Diego Perez Año de 1623.

Title page of VALDEZ's essay on spectacles, Seville, 1623.

Albertotti (*loc. cit.*) endeavoured to secure a copy of the work that he might compare the MS. of the 1627 French translation, found in the *Bibliothèque Nationale* with the original, but the Paris Library did not possess one; moreover, none of the seven 170. More recently R. Greeff (*Zeitschr. f. Ophthalm. Optik*, 97) has given a review of the Valdez treatise, based on the French translation transcribed by Albertotti.

great European libraries that were lucky enough to own a Valdez would loan it to a foreigner. With the exception of two examples, one in Washington and one in the British Museum, the eight known copies are held in Spain.

Albertotti heard of a copy that had been for sale in Paris; I believe this to be the example that, bought by a London dealer, found its way to the Surgeon General's Library.

Valdez's manuscript was censored by Brother Domingo de Molina for the Vicar General; he found nothing in it "contrary to the teachings of the Holy Catholic Church nor against good morals." Not only that, but the learned Brother approved of the philosophic style of the writer and stamped the whole volume with the approval of the Church.

Then follows the *Approvacion* of the learned Doctor Juan Cedillo Diaz of Madrid, who also finds nothing in it *contra la Fe*.

The *Privilegio* of His Majesty is granted for a period of ten years; the conditions of the license must be observed, otherwise a fine of 50,000 maravedis will be imposed, with confiscation of the unlawfully printed books, and the destruction of the printing material.

Following this is the *Tassa (tasa)*, fixing the price at which the volume is to be sold. This was four and a half maravedis a leaflet; so that this book of two hundred pages was retailed at about thirty cents. This seems a fair price when one considers that the purchasing power of early seventeenth-century Spanish money was about ten times that of present day currency.

Finally, after the book had been printed and bound it was again censored by a government official. Its contents were compared with the original manuscript, and it was formally certified that the printed pages, including the *errata*, corresponded to the written copy. Neither Church nor State took chances in the brave days of old!

What may be termed the book proper

begins with the dedication. This was not offered, as in most instances, to the reigning sovereign or to some great noble, but to Our Lady of the Holy Fountain. Couched in poetic and appropriate language the writer shows how much resemblance there is between those limpid streams that in the end join the shining sea, and the light rays, intensified and cleared by such objects as glass lenses, enter and are projected from the human eye.

Surely it is more dignified, also, from the viewpoint of science, to dedicate such a work to the Benign Virgin who knows all our weaknesses and stands ready to help in the hour of need, than to address it to some profligate old patron who generally knew little or nothing about the dedicated book and cared much less about the fate of its writer.

The address to the reader is accompanied by a portrait of the writer. This, in its turn, serves as the introduction to an illustrated, eight-page poem by a friend of the author, a "Romance," describing at considerable length, the appearance of Our Lady of the Fountain in the City of Cordova.

A table of paged (or rather folioed) contents follows.

A second, more scientific, address to the reader is now given in which the author quotes Aristotle and other authorities, to stimulate his study of the natural sciences and particularly to induce him to investigate optics and ocular philosophy, if for no other reason than that "*Dios crio nuestros ojos.*"

Although the table of contents does not indicate it, the Valdez text is comprised in three books, the first two dealing with the anatomy of the eye and the physiology of eyesight. The first book, again, is subdivided into eleven, the second, into ten chapters.

The third book is made up of four curious and interesting dialogues. The *interlocutores*



in each instance include a doctor and a teacher, but the names of certain other participants, mostly pupils, are different or are changed in each dialogue. This ingenious arrangement permits an orderly discussion

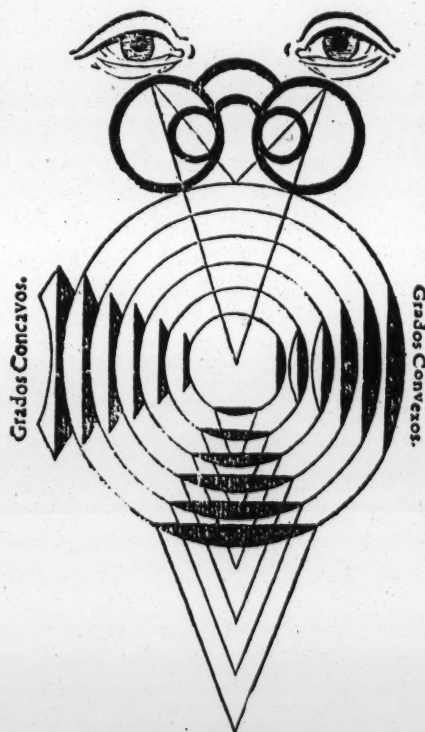


Portrait of DACA DE VALDEZ appearing in his essay on spectacles.

of the preliminary scientific thesis just indicated, followed by a practical review of it by two teachers and their disciples. It is, in fact, a sort of early Spanish "question compend," a useful query- and-answer consideration of practically all that was known or guessed at in the domain of "Physiologic Optics" by Valdez and writers of his acquaintance. Time and space do not permit of a detailed account of these interesting topics but some of the illustrations that elucidate the topics under discussion are here given.

One chapter is devoted to imperfect vision due to natural (congenital) and

acquired conditions; while Chapter Four, Book 1, gives an admirable description of the several improvements in vision afforded by (mark the language) *properly fitting glasses*. In the chapter following, a reference is made to the weak or "depraved" sight of old age. Next in order is a treatise on (congenital) short-sight in infants; on acquired poor vision, especially of those who neglect to provide themselves with the proper lenses; on *anisometropia* (*la vista desigual*); and finally, reasons why shortsighted persons look close at hand, not in the distance, and why old people are generally long or farsighted.



Concave and convex lenses.

(From DACA DE VALDES'S essay on spectacles, 1623)

The second book treats mostly of the provision of lenses for the relief of defective vision, and it opens by a discourse on the happy invention of spectacles. Then follows (Chapter 1) a description of various glasses, and of the optical and other physical

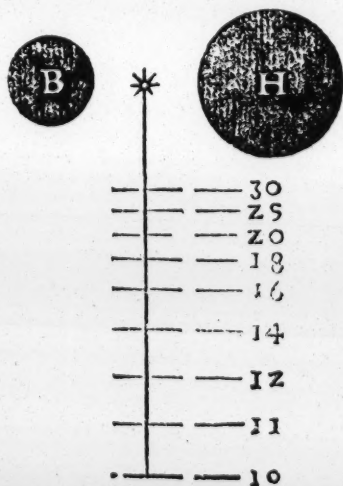
differences between concave, convex and plane lenses. The author also discusses protective (*conservatio*) glasses.

Following these essays, the writer, in a third chapter, answers the question, why do convex glasses enlarge and concave lenses decrease the apparent size of objects? Chapter iv demonstrates (by the help of well-drawn diagrams) why convex lenses

## LIB. II. DE EL VSC

détro de la luna estuviere del mismo tamaño q  
la otra de la. S. que se ve por de fuera de la mis  
ma luna, entonces se note en el palillo el lugar  
donde estuvierón los anteojos, mostrádo la igual  
dad de los círculos. Y quitados los anteojos, apli  
que se el palillo á la línea, desde el punto de la  
estrella: y mire se que número muestra el punto  
señalado en el palillo, que de tantos grados se  
ran los anteojos. Y si passaren de diez grados, en  
esta segun  
da medida.

B. H. se ha  
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mas, hasta  
treyn. Y  
en esta mis  
ma medida  
se pueden  
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A chart for determining the strength of lenses.  
(From Duca de Valdes's essay on spectacles, 1623)

bring divergent rays to a focus, while concave lenses scatter (*apartan*) them.

In a subsequent and important chapter the numeration of lenses is considered, and it is this portion of the work that mostly interests the ophthalmologist. Chapter vi discusses—and what a practical subject!—

the size of the prescribed lenses, and (helped out by diagrams) the means by which one may recognize the strength of both concave and convex glasses. This latter process is mainly that of testing the focal distance of each lens by “a person with perfect sight.”

An account of the chief methods of determining the refraction now follows, in which a decided difference is noted between congenital and acquired visual defects.

Ordering glasses for the relief of presbyopia in the Spain of 1622 was quite as satisfactory and efficient a process as that adopted nowadays by jeweler's shops and department stores. If the patient was not “at hand” the following rules obtained: for a man between 30 and 40 years of age a convex glass of two “degrees” is required; between 40 and 50, two and one-half degrees; between 50 and 60, three degrees; 60 and 70 three and one-half degrees; 70 and 80, four degrees; after that period five or even six degrees.

The “degree” (*vara*) of Valdez closely approximated our diopter. *Vara* was really a Spanish unit of measurement somewhat less than the meter; consequently a “two-degree” lens was “stronger” than our two-diopter glass. For example, a “5-*vara*” lens equals nearly 6 D.; “25-*vara*” equals 30 D., and so on.

For some unknown reason Valdez believed that women require somewhat stronger presbyopic lenses than men. At any rate he found them “more subtle” (i.e. more delicate) than the other sex, and with weaker vision.

The dialogues referred to, “following the custom both of the ancients and moderns,” largely consisted, of course, in a repetition of the opinions, rules and laws of the first part of the work, interspersed with numerous quotations from favorite poets, writers and medical authors of all the ages. They are really quaint, interesting talks not

only about optics but upon all sorts of topics, mostly related to medicine, but now and then on the intimate connection between religion and physiology.

The first conference relates in particular to short, injured or weakened sight; the second series to unusual forms of defective, confused and unequal vision; the third to cases of incomplete correction of visual

perfectamente. Y lo mñimo pueden hazer las mugeres de esta vista corta por naturaleza. Y coméçamos desde cinco grados, por que a buena dñeccion, puede cada vno juzgar, q̄ mien tras mas apartado contàre los granos, menos grados á me nester. Y tambien por no dar mas lu gar la pequenez de este libro à que se apuren los prime ros grados, siendo tan poca la falta que hazen, pues sin ellos se puede pafar la vista, y no ay dificultad en conocerse.

H CAPI.

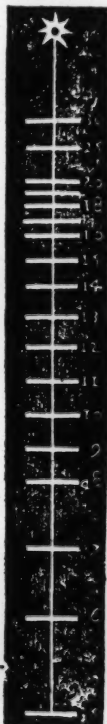


Chart for examining the eyes for glasses.  
(From Duca de Valdez's essay on spectacles, 1623)

defects by glasses and to certain difficulties experienced by patients in their attempt to wear glasses; and the fourth and final conference deals with what we would call "opera glasses"—small telescopes useful for seeing in the far distance.

The actual procedure in choosing reading glasses described by Valdez does not essentially differ from certain methods much employed in the present day, except that the "Master" several times insists that glasses are not cure-alls—thus coming di-

rectly in conflict with some of our modern ophthalmologists—and that the state of the visual apparatus itself (its diseases for instance) and the condition of the general health should always be borne in mind, a contention that raises him miles above the refractionists of the department store or even of the optometrical variety.

Valdez is opposed to the use of the monocle, and puts into the mouth of the shortsighted "Patient"—a member of the conference—a request that he be given a single lens to be used occasionally for distinct vision in the distance and, thus, not to be bothered by wearing glasses constantly; but the Master quickly disposes of that demand by, "Don't do it; such a glass will make your eyes unequal."

Stenopaic lenses were well known to Valdez. "William" tells the Master that he has suffered much from a serious disease of the eyes that has ruined his sight; in consequence, he can read only by (almost) closing his eyes and gazing through the nearly shut lids. The Master then informs William that he can thank the Doctor for an invention that will greatly assist his vision. Two metal disks, mounted in ordinary spectacle frames are to be pierced with holes, of a size and shape indicated by the Master, and worn over the glasses corresponding to his refractive error. When held at the required focus he will be able to read print clearly and with less strain and effort.

The experiences of the doctor in the Valdez dialogues are, generally, also ours. For example, in ordering glasses for myopes these must not diminish the apparent size of the object; nor must the "buyer" choose glasses so strong that they pain or tire the eyes; "it is far wiser to wear lenses somewhat weaker than those that give the clearest sight in the distance since they are more comfortable and do not strain the eyes." Can that advice be bettered?

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tion.



An interesting discussion of the material to be chosen for spectacle frames, and of the form of these, arises. Will the buyer choose leather, steel, silver or gold? Gold frames last longer but it doesn't much matter; he can have steel if he wishes. Leather is certainly a coarse and unsuitable material.

Valdez advises that in ordering *weak* glasses they be made planoconvex or planoconcave, as the case may require, the concave surface of planoconcave lenses to be next the eye, the convex surface of planoconvex glasses to present externally. In ordering *strong* lenses, however, the two surfaces are to be about evenly ground for the purpose.

Protective glasses were in the Valdez period made of almost as many colours as we see in the present-day optician's shop. Valdez points out that they protect the eyes from the winds of winter and the bright light of summer; and the "Spectacle-maker" in the dialogues speaks of light-yellow, dark-yellow, red, green and blue glasses, specially recommending—just as each of our opticians recommends a pet color, shade or make—the first and the last named.

The argument for spectacles as against nose-glasses leaves nothing for modern addition. Valdez remarks, in discussing the

question, that glasses of the latter type are unsteady and likely to fall off the nose, as are all lenses not in some fashion anchored to the ears or to some other part of the head. King Philip, said the Doctor, recognized this need, and had his glasses provided with temple pieces which he inserted beneath his hat and so steadied his royal lenses in front of his royal nose. "That contrivance," replied pupil Apollinaris, "is all very well for kings, who keep their hats on in any presence, but it will not do for a poor man like me. The first time I took off my hat the whole apparatus would fall to the ground."

Finally, the mention of leather as a material for spectacle frames reminds us that probably it was more widely employed as a receptacle for lenses of all sorts (themselves exceedingly expensive even as late as 1620) than is generally supposed. Although leather frames did not stand wear as well as frames made from gold or silver yet they were cheaper and softer; consequently they appealed not only to patients with tender skins but with slender purses. That so few leather spectacle frames are preserved in modern museums may in part be due to the fact of their perishable quality; very few survived the wear and tear of every day use.

QUI DIACE SALVINO D'ARMATO DEGLI ARMATI  
DI FIRENZE, INVENTOR DEGLI OCCHIALI  
DIO GLI PERDONI LE PECCATA  
ANNO D. MCCCXVII.

The inscription appearing on the tombstone of Salvino delgi Armati. The stone originally over his remains in the cloister of Santa Maria Maggiore in Florence has now been removed, with a portrait-monument, from his grave and placed in the chapel of the Virgin Mary on the right side of the church for preservation. The translation reads: "Here lies Salvino de 'Armato delgi Armati, of Florence, the inventor of spectacles. May God forgive him his sins. He died A.D. 1317." (Garrison—*History of Medicine*.)

## CHARLES CALDWELL, A BIOGRAPHIC SKETCH<sup>1</sup>

By WILLIAM SHAINLINE MIDDLETON

MADISON, WIS.

**A** REBIRTH of medicine from the bigotry of fads and theories of practice into the light of modern science marked the first half of the nineteenth century. Medicine advanced from beneath the cloud of superstition to take a dignified, deserved position among its fellow sciences. Of necessity such a momentous transition was attended by controversy, abetted not a little by the instability of the post-bellum period in America. Philadelphia, the center of affairs medical in that day, was naturally seriously involved in the prevalent medical unrest. The system of practice of Cullen had collapsed; and on its ruin, the dominant Benjamin Rush was endeavoring to establish his theory of the unity of disease. Disputation was the order of the day; nor were the methods pursued always above reproach. The scurrilous William Cobbett, under the pseudonym of Peter Porcupine, and other pamphleteers were disturbing the traditional tranquillity of this Quaker seat of learning.

Unfortunately the idealism of John Morgan had been largely replaced by intrigue and petty politics at Pennsylvania. Indeed the system of medical education then in vogue engendered similar conditions in medical centers everywhere. Medical schools were essentially proprietary and the income of their professors depended on the popularity of the group as a whole. The system of direct financial return from medical instruction was in itself reprehensible; supplemented by the existent plan of medical apprenticeship and house or private tutelage, a vicious cycle was instituted which bore fruit in suspicion and calumny.

This period marked the spread of medical education beyond the Alleghenies, and the

subject of this discourse was intimately connected with the establishment of two medical schools in the Mississippi Valley.

Charles Caldwell was a fitting product of these turbulent times. His years (1772-1853) link three important generations of American medicine. By reason of his longevity, personal characteristics and associations, his "Autobiography" furnishes a wealth of historical information. Unfortunately for the accuracy of this elaborate contribution, Caldwell disregards his laudable admonition against self-adulation and deep emotion, and plunges into the relation of events and circumstances which scarcely savor of diffidence or equanimity. But "surcharged as it is with venom and rancour," it remains "a storehouse of facts (and fancies!) relating to the University of Pennsylvania, to Rush and to the early days of the Transylvania University and the Cincinnati schools. Pickled in vinegar, the work is sure to survive."

Although accused "of using more words to say nothing than any other American medical writer of the last century," Caldwell possessed a facility of expression which lends an intimate personal touch to the description of notables with whom he associated. At the beck of his magic pen, the methodical Adam Kuhn stalks stiffly from the written page, clad in the black breeches and long skirted buff waistcoat of the day, with full hand and bosom ruffles. "So sternly and stubbornly regular were his steps: . . . . that he could scarcely be induced to quicken or lengthen them, either to escape from a thunder-gust or a hail-storm, to relieve colic, to arrest hemorrhage, or scarcely to save the life of the most meritorious of his patients." As faithfully does

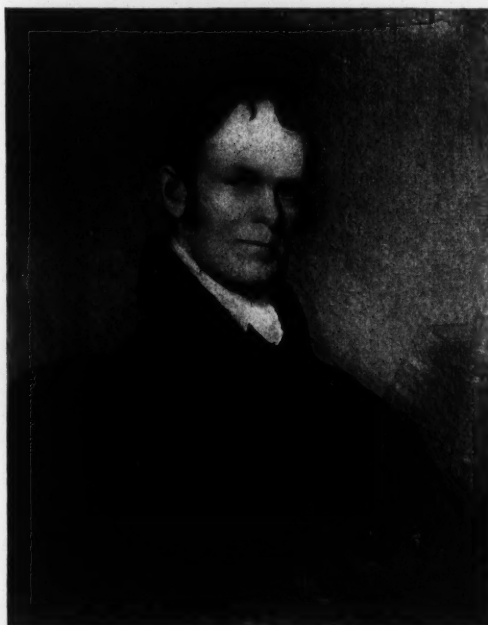
<sup>1</sup> Read before the Medical History Seminar, University of Wisconsin, January 7, 1920.

he portray the suave, polished Rush. Nor does the cockney accent of the famous Priestley escape his attention. The conjurer presents Caspar Wistar, the bustler, "often out of breath and forever out of time." In person, florid and apoplectic, Wistar was possessed of a sensitive nature and quick temper, which time and self-restraint ultimately held in abeyance, until conventional history leaves us only the charming host of mature years. A colleague of Caldwell at Lexington elicited this comment: "But his nerves seemed made of aspen leaves, interwoven with the leaves of *mimosa sensitiva*, that trembled and shrank from the slightest touch of responsibility."

Caldwell possessed a wonderful command of English and eloquence of expression, which made him respected as a public speaker and feared as a disputant. The following extract from "An Address to the Philadelphia Medical Society, February 20, 1801, on the Analogies between Yellow Fever and True Plague" testifies to these powers: . . . "I disclaim all pretension to the ornaments of rhetoric. It neither comports with my qualifications, nor falls within my aim, to awaken your sorrows by the enginery of pathos; it belongs not to me to conduct you enraptured through the Elysium of fancy, to cull on our way the flowers of taste, and strew them before you in the extravagance of declamation; nor is mine the power to overwhelm your souls by the grandeur of imagery, to lead them captive by the magic of harmony, nor to hurry them away by energy of action; the accomplishment of these ends calls for endowments which none but the favourites of nature can boast."

Charles Caldwell was a physical giant, an adept with the sword and foil and an expert marksman with the pistol and rifle. He had but few equals in running, leaping and horsemanship. His carriage was erect and commanding. His head was massive and

well poised; his eyes, bluish grey; his mouth, large with thin lips set in a straight line. Courtly in manner, he practised his belief that "propriety, civility and courtesy of behavior" were the marks of good breeding. In personal habits he was most abstemious and regular.



CHARLES CALDWELL in his earlier years.  
(From the portrait in the College of Physicians, Philadelphia)

The personality of Charles Caldwell lent itself admirably to the times. He classified himself as a "soul enamoured of conflict." Agnew has estimated him, "a man unquestionably of remarkable intellectual force, combined, however, with such incongruous elements of character as were calculated to defeat the best appointed plans of ambition." A contemporary commentary on his character is illuminating: "A man of handsome talents, but something of an evil nature is lurking about him, I suspect." His egotism was colossal. On one occasion he remarked that from the viewpoint of the phrenologist, there were three truly great heads in America, Webster, Clay and "modest



forbids." He was the soul of inconsistency. Vindictive by nature and unbending in conflict, Charles Caldwell was destined to have his most cherished ambition shattered. This disappointment warped the vigorous mind of the virile young man and embittered his declining years.

Born of pure Hibernian blood in Caswell County, North Carolina, May 14, 1882, Charles Caldwell was the youngest of a large family. The parental stock is traced back to the French Colvilles, three scions of which family fled their native land for Great Britain with a price on their heads. One brother lost his life in the flight from France. From the remaining two, all the Caldwells of Great Britain and America have been derived. Of his mother's immediate ancestry nothing can be learned; we have only his statement that she was "of a family of highly reputable standing, but of no wealth." One of her forebears, Colonel Murray, in command of the cavalry at Pennyburn Mills before Londonderry challenged King James' cavalry leader, Lieutenant General Maimont, to personal conflict and, before the assembled armies, slew him.

The elder Caldwell was a man of great physical strength and personal beauty. Dependent on the meagre income of a younger son, he was forced through the increasing responsibilities of family to give up the military service and to seek his fortune in America. Sir David Caldwell, an older brother, remarked "that spendthrift young dog, Charley, if he did not break his neck in some of his freaks, or fall in a duel, or be killed in some other madcap affray, would yet be a general—ay, and a brave one, too." Settling in Newark, Delaware, the Caldwells conducted a successful merchandise business, until the father attracted by the greater promise of agricultural pursuits took up land in Caswell County, North Carolina. Prosperity was again his lot and he became quite a man of affairs in

that state. He was one of the distinguished signers of the Mecklenberg Declaration and with two older sons served in the Revolutionary war.

Favored as a younger son and encouraged in his studious habits, Charles, junior, cultivated application and intellectual initiative beyond his years. In their frontier existence, instruction was most desultory and instructors, indifferent. His early tutelage was far from stimulating, with one exception: his first Latin teacher, the cadaverous Dominie Harris, sowed the seed of oratorical aspiration in the fertile mind of young Caldwell. The loss of his parents at the age of fourteen threw an unexpected financial burden on the boy. But undaunted he undertook the charge of Snow Creek Seminary, a grammar school near Bushy Mountains, North Carolina. In this capacity his natural discipline and aloofness from boys of his own age offset his extreme youth. Furthermore from this experience he gained mental precision and self-confidence. Before he had attained the age of eighteen, Caldwell was called to establish another preparatory school in North Carolina, Center Institute.

From the beginning, his education had been pointed toward the Presbyterian ministry. But "he had conceived a few opinions in religion deemed uncanonical, under the influence of which he could not, consistently with his sentiments of truth and honor, select and pursue the clerical profession." Further, while protesting his fidelity to the church, he urges, "Should scriptural tenets be opposed, therefore, to nature, they ought to be rejected, however venerable time may have rendered them, whatever sanctity they may have been supposed to possess on account of their source, or whatever authority they may have derived from the advocacy of divines and scholars, and the homage of Christendom." More bombastic is the following quotation in criticism of Noah's ark, uncanonical, indeed!

'Black Hole of Calcutta' was a paradise to it! . . . Yet Noah and his family and the hosts of animals enshrined with them in the horrid dormitory, without air, without light, and filthier far than the Augean stables, emerged from it in health, after a soaking in it of a hundred and fifty days!

We are told, by the fanatical defenders of the scheme, that the lives of Noah and his retinue were saved by miracle. By miracle, indeed, it was, and one of the most stupendous the Deity ever performed. And as easily, and in much less offensive style, could he have saved them on a few floating planks, a fleet of egg-shells, or the uncovered and obedient surface of the waters.

Excluded by these circumstances from the profession, for which he had prepared, Caldwell considered law, the military service and medicine. Law was rejected by reason of a pledge given his father. The advice of friends caused him to choose medicine in preference to military service. In later years Caldwell regretted this choice. "I have always considered my attachment of myself to the profession of medicine an injudicious measure. True, I have subsisted by it, done in it some good, accumulated some property and acquired some reputation. But it has in certain respects cramped my mind, limited the exercise of its faculties, and withheld me from a sphere of action to which I consider myself better adapted. My choice of a profession has been therefore unwise."

To further prepare for his medical education, he spent one and a half years in Salisbury, North Carolina, under the preceptorship of a Dr. Harris, brother of his old tutor, Dominie Harris. Unfortunately Dr. Harris, though a recent graduate of the University of Pennsylvania, possessed a very inadequate library. The time spent under his instruction Caldwell terms "the most unqualified and indefensible waste of time I have ever committed."

During Caldwell's stay in Salisbury, President Washington made a tour of the

South. His route on the return trip passing through Salisbury, it was decided to give him a fitting military escort and reception. After considerable preparation lots were drawn to form the advance party and Caldwell was one of the fortunate members of the company selected. Then he further was chosen to lead this party and to welcome Washington. To his utter chagrin on meeting the distinguished general he was struck speechless and could do nothing but salute in silence. Although Washington had, in the meanwhile, by his gracious courtesy put him entirely at ease, again on parting, Caldwell was too moved for words. Particular reference is made to the veneration in which Washington was held.

An episode in the Chestnut Street Theatre, Philadelphia, serves to emphasize this impressionable phase of Caldwell's nature. During a performance of "Alexander the Great," the murder scene so affected him that when the glittering dagger was drawn, he sprang to his feet and only physical force prevented him from disarming the actress. Of course, the climax of the play was interrupted and laughter greeted stage effects intended to be tragic.

In the choice of a medical school, Caldwell turned to Pennsylvania which during this period easily outranked all other medical schools in America. Her faculty by personal qualifications and training was superb. Shippen, Wistar, Kuhn, Rush, Griffiths and Hutchinson were outstanding names in that day. Furthermore, Philadelphia was the metropolis of the United States. In commerce this city far exceeded New York, until the pestilence of yellow fever in 1793 started the pendulum of trade swinging to the north. The placid atmosphere of the Quaker center fostered art and learning.

The opportunities for intellectual advancement in Philadelphia loomed as an oasis to the knowledge-thirsty youth. However, his ambition in oratory was not

stimulated by certain lawyers, distinguished for their powers of persuasion, nor by the style of certain notable clergymen of the city. But an extraordinary opportunity to study the style and manner of address of successful public speakers was afforded by Congress then in session. Flowery oratory was held in high esteem at that time and the spirit of emulation was strong in the young Southerner. James Madison was commanding the respect of the House by his pointed thrusts in debate. Ames was holding his audiences spellbound by the polish and brilliancy of his speeches. In fact, a more auspicious setting for the education of the ambitious youth could scarcely be pictured.

The medical school was opened in the autumn of 1792 by the inaugural address of the venerable William Shippen. But for his striking presence and suave personality, the uninteresting lecture, read in a monotone, must have left a poor impression. The subject matter was taken unaltered from Shippen's honored master, William Hunter, and dealt in a stereotyped manner with the composition of man. Tradition credits Shippen with the repetition of this lecture as his inaugural address without alteration or addition from the opening of the medical school until his death. The brilliance of Benjamin Rush's introductory lecture on the following day dissipated Caldwell's fears as to an injudicious choice of medical school. His impressive conversational tone carried the weight of conviction. Only when excited, did he wax eloquent. He possessed the power of stimulating his auditors. His enthusiasm was contagious. The concurrence of Rush in certain long cherished thoughts on the equality of Americans and Europeans led Caldwell to prepare a laudatory notice of the lecture. This article appearing in the *Aurora*, a newspaper edited by B. F. Bache, grandson of Benjamin Franklin, created considerable comment. The chair of the theory and practice of physic was occupied by Adam

Kuhn of disconcertingly punctual habits. Although trained under Linnæus and the elder Monro, his lectures directly derived from Cullen, were most commonplace. Caspar Wistar, as adjunct in anatomy and surgery, had not yet developed to his eminent position in practice or in teaching. Indeed in this stage of development, Caldwell claims his ability was as much underrated as in later years it was overrated. Hutchinson and Griffiths failed to impress Caldwell.

His habits as a student were most exemplary. He maintained an aloofness from his fellow students and followed a plan of life which reads like pages from Horatio Alger of our boyhood days. He occupied the same seat in lectures for the rather ignominious purpose of attracting his professors' attention. Particularly was he desirous of making an impression on Rush. In addition to his medical work, Caldwell read the classics and aspired to poetry and critical essays for public consumption.

His continued public notices of Rush's lectures created considerable comment in medical circles, particularly as to their authorship. By some channel Caldwell's connection became known to Rush, and through Rush's eldest son an invitation to tea at their home was tendered Caldwell. Rumor alleges that Rush made a practice of proselyting the more promising students to his theory of practice. However, Caldwell was completely disarmed by the cordiality of his welcome to the Rush home and vastly impressed by the high standard of their conversation. Under the nom de plume, Aretæus Jr., he continued his notices of the professor's lectures and soon began to supplement these by personal opinions of the matters under discussion. It was well known that Rush would not brook independence in either associates or students, and Caldwell was disconcerted to find an abnormal reluctance to discuss in his articles points of



difference of opinion with Rush. Ultimately, however, one of his public articles controverting Rush's theory of the unity of fever through a "convulsion of the arterial system" aroused the master's displeasure.

On the completion of his first course of lectures (1793) Caldwell planned a strenuous summer. When he submitted his schedule to Rush for advice, the latter protested against his lack of provision for relaxation. He undertook a course of lectures in botany and natural history under Barton; but a second course on the Brunonian doctrine of medicine was abandoned through "Dr. G's" (Griffiths?) unwillingness to defer the payment of the required fee. Clinical study at the Pennsylvania Hospital, together with scientific and medical reading, completed the work planned for this period.

The fall of 1793 with its horrible epidemic of yellow fever marks the gravest tragedy in the history of Philadelphia. Here, too, is written the most brilliant page in Philadelphia medicine. Preceded by a drought of three months, the pestilential flood suddenly broke loose early in August. In spite of all efforts the epidemic spread rapidly leaving untold dead in its wake. Business was suspended. The erstwhile crowded market places were deserted and quiet reigned save for the ominous rattle of the carts collecting the dead along the cobbled streets. Terror smitten, a large percentage of the population fled the city. With them passed a certain number of distinguished practitioners of medicine; but to the undying credit of the medical profession be it written that the epidemic was limited, and untold suffering relieved through the tireless devotion to duty of a less selfish majority of their fellow practitioners. Furthermore, the contributions of Benjamin Rush and others to the knowledge of yellow fever based on their experience in this epidemic were revolutionary. One member of the medical faculty, James Hutchinson, died a martyr to duty.

Had Charles Caldwell no other claim to fame, his conduct in the pestilence of 1793 and subsequent visitations of yellow fever in Philadelphia would assure him a place of honor in American medicine. Stranded by the removal from the city of two successive landlords, the young medical student volunteered his services as a nurse, without remuneration, in Bush Hill, the pest house of 1793. As an attendant he frequently slept in the same room and even on the same bed with fever patients, which experience converted Rush from his belief in the contagious nature of the disease. The opportunity for personal advancement was not lost on Caldwell, for, on the resumption of the meetings of the Philadelphia Medical Society in December 1793, he urged the domestic origin and non-contagiousness of the fever so effectively that he won the approbation of Rush. A division of the profession resulted on these points and strangely, with few exceptions, those who had deserted the city in its dire need were the defenders of the theory of a foreign origin.

The session of 1793 of the medical school was opened by Benjamin Rush with his memorable lecture on the epidemic of yellow fever. He painted a vivid picture of the desolation and hardships encountered. And further his famous "ten and ten" treatment was advanced. Naturally this radical therapy of ten grains of jalap and ten grains of calomel supplemented by appropriate venesection aroused a storm of opposition.

In the controversy which resulted over these differences of opinion, Caldwell took an active part. He eagerly entered the lists of public debate with the avowed purpose to "diffuse a belief in my fitness to become, in time, a professor of medicine." Not satisfied with the ordinary course of argument, he not infrequently took the obviously weaker ground so as to improve his powers of debate—a practice which proved

disastrous to him by reason of its self-hypnotic influence. Of Caldwell's diligence and sincerity of purpose there can be no question. He wrote that "a man destitute of medical literature and science, and undisciplined in composition, reading, and speaking, seated in the chair of a medical professor, constitutes one of the fittest of 'objects for scorn to point her slow moving finger at', and for all well qualified and high-minded teachers to treat with contempt." His indefatigable study of medicine and the classics, his analysis of the style of successful public speakers and actors and his close application to his chosen field all bespeak his depth of purpose.

About this time, Rush suggested to Caldwell the necessity for an adequate English text on physiology. Brooks and Cullen were both inadequate and the existing translation of Haller was indifferent. To meet the demands for instruction a new translation of Haller seemed advisable; but the appearance of Blumenbach's "Physiology" rendered its utilization more logical. To the difficult task of translating this text written in German Latin, Caldwell applied himself assiduously from March to September (1794). During this period he slept only three to three and a half hours daily and his diet was vegetarian except for milk and eggs. Broadsword exercise constituted his only relaxation. Caldwell's Blumenbach, published by Dodson, was early followed by an English edition by Elliottson, whose subsequent editions rightly appeared under his own name by reason of his numerous additions.

The arduous spring and summer left Caldwell very much worn out. So the outbreak of the Whiskey Rebellion in Western Pennsylvania came as an opportune diversion. The refusal of certain distillers in this mountainous district to submit to the levying of a revenue tax on their liquors constituted the first serious test of the stability of the Federal government.

Washington's prompt call of 15,000 men to arms from Pennsylvania, Virginia and New Jersey was an effective demonstration of the serious intent of the central government and the mutinous distillers were quelled without bloodshed. Caldwell served as surgeon to one of the Pennsylvania organizations during this campaign, but was given certain liberties on the line of march, which enabled him to take long trips through the beautiful mountains along their route. Indeed, on the return trip he was virtually a free lance, appearing only at appointed places to meet his unit.

An episode leading to Caldwell's appointment as surgeon to this expedition is worthy of recounting, since its appearance in the "Autobiography" opened Caldwell to charges of gross inaccuracy. With much gusto, Caldwell details the catching of a runaway horse—himself figuring as the hero. Chance favoring him, the occupants of the carriage whose lives he had saved, proved to be the wife and daughter of "General G-r-y." From the depth of his gratitude at the happy deliverance of his loved ones from danger, the general readily acquiesced in obtaining the desired commission for Caldwell. Unfortunately for the acceptance of this dramatic incident, General Guernsey to whom Caldwell refers, had no children by his first wife and remarried in 1793. The nine year old child, affectionately termed Jane by Caldwell, whose life was saved in 1794, was not born until toward the close of 1795. The unequivocal descriptions and further remarks on the ripening of their associations into friendship preclude an alibi on the ground of the child's having been merely a friend of the Guernsey family. Further doubt is cast on the incident by the total ignorance of the two daughters of General Guernsey of such an accident; the first intelligence of which came through Caldwell's "Autobiography."

Returning to Philadelphia from this military expedition, Caldwell was surprised to

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find himself lionized; and unable to live his customary life of a recluse, he lent himself to the social life and festivities in honor of the returning soldiers. Temporarily his ambition in medicine seems to have been lulled by the flattery of this attention from notables in public life. Ultimately, however, he came to a realization that his conceit and haughtiness toward men deemed his inferiors were alienating his associates. He asserts, "No sting penetrates so deeply, poisons so irremediably, or is remembered so interminably as that of contempt."

The breach between Rush and Caldwell, which had been threatened on the latter's public presentation of views on the unity of disease contrary to the master, was now rendered inevitable by Caldwell's resentment of Rush's utilization in lectures of his suggestion regarding the efficacy of cold water in the treatment of fever without crediting him with its origination. Caldwell's discovery, which antedates James Currie, came as the result of a drenching on the march west in the Whiskey Rebellion. In a letter to Rush addressed not from Lancaster, as Caldwell states in his "Autobiography," but from Bedford, October 20, 1794, this experience was detailed: "I was, to use a vulgar expression, wet to the skin, and had no opportunity of shifting my clothes for several hours. In consequence of this thorough bathing, and my subsequent exposure to a cool air, I was relieved from every symptom of indisposition in a few hours, and have enjoyed more than my usual stock of health ever since." This extract is contained in Rush's "Medical Inquiries and Observations" with, however, simultaneous mention of a personal experience and the quotation of Daignan's case of plague, which recovered after exposure to a rain storm. Caldwell sought redress for Rush's failure to credit him with the idea in his lectures by presenting a paper on the "Use of Cold Water in the Treatment of Fever" before the Philadelphia Medical

Society. Naturally the "theory guard," as Caldwell terms the adherents of Rush's principles, rose to his defence. Reports of the circumstance alienated Rush's interest in and support of Caldwell. Never afterward did the same frankness and mutual support characterize the intercourse between these men.

On the advice of the dean of the Faculty, Caldwell omitted mention of the cold water therapy from his inaugural thesis, which was defended May 17, 1796. Notwithstanding this concession there is reported a dramatic passage of arms between the distinguished professor of the theory and practice of physic and the candidate for the doctorate degree on the occasion of the latter's examination. The thesis, "An Attempt to establish the Original Sameness of Three Phenomena of Fever," was a decidedly mediocre and inconclusive production advancing the probable unity of etiology of "Hydrocephalus Internus, Cynache Trachealis and Diarrhoea Infantum." Caldwell derived from faulty reasoning that the three conditions were "noxious and exuberant branches from the same parent stock." Wistar magnanimously admitted the fallacy of his theory of oedema as arising from the gravitation of fluids along tissue planes, when Caldwell in this thesis advanced the debilitated state of the walls of veins as the more probable cause. Aside from this improved concept, any merit residing in the thesis lies in an interesting clinical observation on the diarrhoea of children. It "prevails only during the summer and the earlier part of the autumnal season; and seldom appears save in the foul and heated atmosphere of a crowded city. The pure and breezy air of country situations remote from marshes or other large bodies of stagnant water, so far from giving origin to this melancholy disease, affords the most efficacious remedy to such children as have already become the unhappy subjects of its violence."



According to Caldwell, Rush sought to interrogate him on the passage in his thesis as to the relief of fever by cold water, which had been deleted. Provost Ewing overruled Rush on this point. And then after a rather heated passage of words, Caldwell denounced Rush for using a spurious copy of the thesis. Rush, beside himself with rage, is reported to have asked, "Sir, do you know who I am, or who you are yourself, when you presume thus arrogantly to address me?" To which Caldwell answered, "Know you, sir? Oh, no; that is impossible. But as respects myself, I was this morning, Charles Caldwell; but indignant as I now am at your injustice, call me, if you please, Julius Caesar or one of his descendants!"

Some doubt is cast on Caldwell's account of this episode by reviewers of a contemporary period. For example, Samuel D. Gross ridicules even the thought of this effrontery to such a well-poised dignitary as Benjamin Rush. Another points to the improbability of a man of Rush's station being discomfited by a mere student. But regardless of the accuracy of Caldwell's narrative, it is a matter of historic record that Rush refused to sign his diploma until Caldwell apologized. Nor did he weaken in this resolution until importuned to overlook the matter several years later by David Rittenhouse.

The period following graduation found Caldwell active in practice and in the proceedings of the medical societies. He joined fortunes with the group of medical men splitting from the College of Physicians to form the Academy of Medicine. With Philip Syng Physick as president, Caldwell served as vice-president of this organization in 1798. He was re-elected to this office in 1799. In the proceedings of the College we learn that Charles Caldwell lost his fellowship in that body on January 4, 1803, because of non-payment of dues for three years. Caldwell's agitation through the public press and medical channels combined with the

efforts of Physick and Rush, resulted in the introduction of Schuylkill water into Philadelphia. The project was started in 1797 and completed in 1801. This rather extravagant system was replaced by a more economical plan in 1819. (Addendum A.)

During the trying period from 1793 to 1805 when yellow fever was constantly sporadic and seven times epidemic in Philadelphia, Caldwell was three times affected by the fever—"each successive attack," he remarks, "less severe than the preceding." The first of these attacks, in 1797, succeeded a period of marked literary activity in defence of Rush who was being shamelessly attacked for his advocacy of the local origin of the fever and his treatment thereof. By disguising his style and by swearing the editor to secrecy, Caldwell kept Rush in ignorance of the authorship of these articles—a circumstance which scarcely savors of sycophany. Caldwell's illness brought this series of articles to a sudden termination, and Rush, by this time suspicious of their origin, traced them to his door. With Physick, Rush attended him through this serious illness. The gingivitis resulting from his mercurialization persisted until all teeth were lost by 1836. This local condition, however, in no way affected his general health, and Caldwell further vindicates the use of large doses of calomel in yellow fever since it induces an "artificial cholera morbus" thereby "converting centripetal into centrifugal action."

Caldwell's observations on yellow fever are worthy of consideration. With the current belief of the day, he agreed that the pestilential fever was a severe form of autumnal fever. It arose from the putrid miasmata of marshes or decaying materials. Then, too, he held that meteorological irregularities of one kind or other were predisposing factors in the development of epidemics of yellow fever. His personal experience led him to reject the contagious theory of the spread of the disease; yet he

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urged people to sleep above the level of the pestilential effluvia. His admonition to avoid night air was an unconscious step in the right direction. Without attributing a causative relation, Caldwell remarked on the swarms of insects, particularly mosquitoes, appearing concomitantly with the yellow fever. He felt that the insects were, as the fever, dependent on the putrid exhalation for their multiplication.

Caldwell entertained rather advanced views on quarantine regulations. As a member of the Board of Health, he was instrumental in having the inordinate period of quarantine of vessels at the Lazaretto reduced to the interval just necessary to properly cleanse the ships and to inspect passengers and cargo. This plan was later subscribed to by New York, Boston, and Charleston. His essay on quarantine won the Boylston prize at Harvard in 1834. The rigorous quarantine in countries surrounding Spain, when an epidemic arose in that country, evoked the following characteristic expression of sentiment from Caldwell: "Unless the pestilential constitution which appears to prevail in their atmosphere be done away; or a system of domestic cleanliness be rigorously enforced, as well might those nations attempt to countermand the laws of planetary attraction, or to stay, by the military guards, the course of the angel that rides on the whirlwind, as to set limits to the ravages of this calamity."

Organizations for the civic betterment of Philadelphia would do well to consult the "Memoirs of Charles Caldwell" published in 1801 for comprehensive suggestions in city planning and sanitary reform. He scores heavily the avarice which led to an abandonment of William Penn's plan for an ideal city. Particular reference is made to the congested river front, which by Penn's wise provision had been eliminated to afford Front Street on the high river bank a beautiful outlook over the Delaware.

Deceitful shortsightedness and cupidity frustrated this plan and Water Street with all its filth and squalor became the hot bed of disease. Caldwell urges the replacement of decaying wooden wharves by substantial and hygienic stone structures. The paucity of public squares and shaded walks is deplored. Inspection of slaughter houses and their removal from the crowded city are advocated. The filthy state of sewers, gutters and alleys is deemed scarcely conducive to good health. Caldwell points out that as early as 1762 Thomas Bond, in a lecture at Pennsylvania Hospital had warned that the filth of the city was capable of producing yellow fever. The unsanitary condition of graveyards and privies is declared appalling. The unhygienic state of Philadelphia at that time was in large measure due to the ill-founded complacency arising from the theory of the foreign origin of yellow fever.

To Philadelphians the following plan for the improvement of the League Island district has a most prophetic tone:

The clearing, draining and cultivation of that neighbouring and marshy tract of country, denominated the 'Neck,' is a measure calculated to improve the health of our city.

Lying but a short distance to the southward of Philadelphia, and giving origin formerly to an immense volume of marsh miasma, this subtle poison must have been necessarily conveyed to the city by the autumnal winds.

The cultivation of the soil has not only given a check to the generation of this poison, but has covered the surface of the earth with an abundance of vegetables, which absorb and convert it to their own nourishment. For vegetables act as the scavengers of the atmosphere, clearing it of such gases as are hostile in their nature to the health of man.

An additional step might yet be taken to give us greater security against the influence of the deleterious air in question. Were several adjoining lots to the southward and westward of the city, converted into a park or public garden, and covered with grove and forest trees, these lofty

plants would not only aid the inferior vegetables in devouring miasmata from the neighboring marshy grounds, but would also act mechanically in arresting the winds, which mingle this exhalation with the atmosphere of our streets.

As an essay on civic betterment and public sanitation, this work deserves a high rank. Were it not for the fact that the author at times sacrifices substance for rhetorical effect, the notice received would have been greater and the good achieved more lasting.

Caldwell belongs to that progressive group of American physicians who early put vaccination to the practical test of personal application. In a letter under the date of July 22, 1802, addressed to Lyman Spalding, Caldwell says that his personal experience with "Kine Pox," substantiated by that of his friends has been "sufficient to convince them of the power of this disease (if it deserve so harsh a name) to eradicate from the System a Susceptibility of Small Pox."

In 1803, Caldwell introduced clinical instruction into Blockley (Almshouse). He was not, however, as has been erroneously quoted, the first teacher of clinical medicine in Philadelphia. As early as 1766, Thomas Bond had delivered clinical lectures in the Pennsylvania Hospital. Caldwell seems to have submerged his differences with Rush at this stage of his career and for a time their relationship was more tolerant. He lost no opportunity of improving his mind or his teaching qualifications. With Rush's permission, he followed the professor through the wards of Pennsylvania Hospital giving bedside instruction to such students as were interested.

At Rush's instance, the editorship of the "Thesaurus Medicus," a compilation of theses defended by graduating students, was assigned to Caldwell. Primarily, Barton and Woodhouse, two junior faculty members, had been delegated to this task. Lack of cooperation and application between these two permitted the work to languish. (Addendum B.)

The first volume appearing under Caldwell's guidance in the autumn of 1805 was accorded a gratifying reception by the profession at large. His personal contributions to this volume on the "Vitality of the Blood" were lauded by Lettsom, Darwin and Beddoes. These observations on the blood were in truth elementary. As criteria of the vitality of the blood, he considered stimulability and the power of self-preservation. To derive this data, age, exertion, gases and physical measures, as electricity, were studied with relation to their influence on coagulation and putrefaction.

The opposition of Barton and Woodhouse led to the failure of the second volume in 1806. Furthermore, they engineered a movement among the students complaining of the unnecessary expense of the publication of their theses. In turn the faculty and trustees voted against the continuance of the "Thesaurus."

This circumstance was not, however, the primary source of friction between Caldwell and Benjamin Smith Barton, successively professor of botany and natural history, of materia medica and lastly of the theory and practice of medicine at Pennsylvania. Caldwell dates this feud to the plagiarism of his theory of the loss of pigment in a full blooded negro, Henry Moss by name, who was attracting wide attention in scientific circles in 1795. Barton had averred that the phenomenon was due to undue sweating. Later, however, he accepted as his own, Caldwell's explanation that the bleaching was due to a loss of the rete mucosum. Furthermore, Caldwell exploded the preposterous theory of the winter retreat of swallows entertained by Barton. On rather circumstantial evidence, the latter had taught that swallows hibernate in the mud at the bottom of lakes or in tree stumps. Then, too, Barton's miasmal theory of the origin of goiter fell under Caldwell's attack. In this refutation, his strongest point was made in calling attention to the

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In Caldwell's personal estimation of Professor Barton, there are strange discrepancies between his "Autobiography" and his papers contemporaneous with Barton's life. Aside from a comment on his enthusiasm and the credit due his introduction of botany into the study of *materia medica*, references to Barton in the "Autobiography" are most depreciatory. In the "Memoirs" (1801), on the other hand, Caldwell ranks Barton as one of those "characters conspicuous for their talents and philosophical attainments." At that time his writings were characterized by "variety of matter and simplicity of manner—that richness and perspicuity." Such was Caldwell's consistency!

At Rush's suggestion, Caldwell made a translation of Senac's "Treatise on Remitting and Intermitting Fevers." In the dedication of this volume to Rush, he expressed the following felicitous feeling toward the master:

But I am actuated, also, by other considerations, which though more private and personal in their nature, are not with me less powerful in their operation. These considerations, were they to be even rejected by the judgment, would appeal to the feelings, and though repulsed from the head, could never fail to gain admission to the heart.

During an intercourse of some continuance, particularly during my medical pupilage and the first years of my practice as a physician, I received from you many acts of attention and courtesy, which as a young man and a stranger in the place, impressed me deeply at the time, and have still continued to be sources of grateful recollection. Out of these civilities, obligations naturally arose on my part, which our present situation has not yet allowed me to cancel. It is even possible that an opportunity of cancelling them may never occur. I must, therefore, beg your acceptance of this dedication as some acknowledgment of them, accompanied by my sincere wishes for a long continuance of your

health, happiness and useful labors. For however grateful, in the evening of life, the *otium in secessu honestum* may be to a philosophical and contemplative mind, I am unable to wish you such a retirement. It is enough that we should be deprived of your labors and services when you have gone to enjoy the reward of them in a better world.

October, 1805.

CH. CALDWELL.

Again in his history of the epidemic of yellow fever of 1805, Caldwell is most laudatory of his teacher. But certain developments renewed the gap between them and friendly intercourse was never again resumed. Caldwell believes this coolness to have resulted from his independence of thought and action. However, Rush's announcement of the opposition of certain faculty members to Caldwell and the improbability of his election to the chair of medicine at Pennsylvania would seem the more logical explanation for the break. Caldwell thus relates Rush's message: "Of your talents, attainments and powers in lecturing and instructing, they speak in the most respectful and flattering terms. But they are reluctant to recommend you to the Board of Trustees, in the light of a professor." A plan to divide the chair of medicine into the theoretical and practical branches, as advocated by Caldwell, was defeated.

Stung to desperation by the frustration of his plans, Caldwell first considered a professorship proffered him in the new school at Greenfield, New York, and later a chair in Baltimore. Unmindful of his injunction that "whatever injures the standing of the mother, falls like a blight on that of her children," he seriously contemplated the establishment of a new medical school in Philadelphia. Apparently he was only deterred in his plan by the dearth of kindred spirits to assist him in the project. It is interesting, by way of contrast, to note the following quotation from his "Thoughts on the Impolicy of Multiplying Schools of Medicine" delivered in Lexington some

thirty years later: "The selfish passions of envy, resentment, ambition, or the desire of distinction of a few individuals, should have no concern in their establishment." What a radical change of view!

Failing in his efforts to establish a new school of medicine, Caldwell next instituted a series of public addresses with the avowed purpose of refuting some theories cherished by Rush. He persisted in this campaign of iconoclasm against the strong opposition of his friends. His first attack was on the Brunonian hypothesis of life, which with certain reservations had been adopted by Rush. This doctrine, the product of the dissolute ingrate, John Brown of Scotland, deemed life to exist only as the manifestation of reaction to external stimuli and classified diseases on this basis as sthenic or asthenic. With all its vulnerable points it naturally offered a pregnable mark for Caldwell. However, one is surprised to find from time to time obvious adaptations of this principle to Caldwell's teachings. For example, in his "Memoirs," with reference to yellow fever, he states that it is a disease of excessive action, produced and continued by an excess of external stimuli. He concludes that it should therefore be treated by sedative or evacuant drugs.

Several days after his Brunonian lecture Caldwell attended a lecture in chemistry by John Redman Coxe. At the close of this lecture certain students manifested their displeasure at Caldwell's presence by hissing. Coxe, under the impression that the affront was meant for him, was disconcerted until Caldwell's name was called. In his account of the incident, Caldwell relates that he moved in the direction of the voice, saying: "I know of but three sorts of vermin that vent their spleen by hissing: an enraged cat, a viper and a goose, and I knew not till now that either of them infested this room." His further elaborations of the episode are termed

"deceitful reveries" by an eye witness. Indeed doubt is cast on the depth of Caldwell's emotion at the time of the unpleasantry, when he is reported to have remained unruffled and as he strode contemptuously over the benches to have remarked to the professor unconcernedly, "No animals hiss except snakes and geese."

Unsuccessful in securing a teaching position in the medical school, Charles Caldwell continued his attacks on Rush. In 1809, he rented a room close by the school in Market Street, above Ninth and advertised his lecture courses by stationing a servant at the entrance to the University with hand bills. (Addendum C.) The first few lectures were well patronized and then attendance waned markedly. Finally Caldwell moved to less presumptuous quarters in the Second Street Market House. A student of that period reports that with one other he formed an audience at one of the lectures there given. Shortly Caldwell gave up his attempt at private teaching, only to resume it in another luckless attempt after a short time. Letters of this period reveal his vexatious frame of mind. (Addendum D.)

With a rankling in his soul, this contentious Tom Touchy of Philadelphia medicine drifted from one controversy to another. In 1848 he confessed that "never since the year 1793 until the present date, have I been free from a contest against some opinions or doctrines which I consider erroneous." He seemed unable to eliminate the personal element from these controversies. His attack on Dr. Thomas Sewall in "Phrenology Vindicated" was particularly vituperous. (Addendum E.) Although justifying the charge of plagiarism against Sewall by the "deadly parallel" yet his personal affronts were unjustified and abusive.

One of his most unfortunate contentions was with the learned President Smith of Princeton. In answer to that distinguished

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clergyman's essay on "The Causes of the Variety of Complexion and Figure of the Human Species," Caldwell launched a vehement critique, in which he maintained that climate and environment were incapable of inducing the differences of the various races. Smith resented this attack, and his early death was attributed by his friends to the bitterness of Caldwell's arraignment.

On one occasion, Haygarth of Bath aroused Caldwell's wrath by presuming to criticize the latter's address on the laws controlling epidemic diseases, delivered before the Academy of Medicine of Philadelphia. Caldwell, when rebuked by Lettsom of London for his inconsideration of Haygarth's age, stated that Haygarth had observed "neither delicacy, decency, nor truth," and was therefore unworthy of consideration. This incident alienated Haygarth, but Lettsom continued his correspondence with Caldwell.

Nor were all his controversies confined to matters medical. In 1803, Thomas C. James, by common estimate "an amiable, gentle and accomplished gentleman" who will be recalled as the first systematic teacher of obstetrics in America, accused Caldwell of altering the figure and date on receipts from the treasurer of the College of Physicians. He appealed to the governor of Pennsylvania to have Caldwell relieved from the Board of Health. Both were members of the staff of the Philadelphia Almshouse at the time; but its managers refused to be involved in a purely personal squabble. However, at the next election of staff physicians, Caldwell was dropped and James continued in office. Notwithstanding the action of the Board, Caldwell was still permitted to continue his clinical rounds and to teach in the hospital. James's early resignation from the staff leaves the question of equity open.

Caldwell's account of the circumstances surrounding the death of Benjamin Rush on

April 19, 1813 is most garbled. His insinuation that Rush died by his own lancet, is dispelled by James Mease who was present when Rush died. Dr. Mease, with Dorsey, Griffiths, Physick and James Rush, attended him in his last illness. Furthermore, Caldwell's divergent accounts of the circumstances surrounding Rush's death present an interesting study.

It is hard to reconcile the following diametrically opposing pictures as products of the same pen. In Caldwell's "Autobiography" it is stated, "Nor was the door of his dwelling surrounded during his illness by crowds of anxious and sorrowing inquirers after his condition, and the prospects of his recovery." Further, "No cloud of woe descended on the city sufficiently deep and dark to indicate the death of a great man, who had long been the pride and boast of the country—who had figured as a distinguished Revolutionary patriot, whose life had been a galaxy of the labors and deeds of philanthropy, and who had been for forty years the acknowledged cynosure of American medicine." From Delaplaine's "Repository of the Lives and Portraits of Distinguished American Characters," of which Caldwell was editor, we learn that "since the death of Washington, no man perhaps in America, was better known, more sincerely beloved, or held in higher esteem. Even in England, the tear of sensibility descended on his ashes and the voice of eulogy was raised to his memory."

. . . "For nearly 3000 years past, but few physicians equal in greatness have appeared in the world; nor is it probable that the number will be materially increased for ages to come." Caldwell's subsequent effort at retraction on the ground of a temporary submergence of his better judgment in deep emotion, is inadequate in view of the effusive scope of his panegyric. His statement that no eulogist could be obtained to prepare a notice of Rush's death is apt to be misleading, unless one realizes that



the only available speakers of prominence, Chapman, Caldwell and Barton, were all personal enemies of the deceased. Ramsay of Charleston, wrote the only contemporary notice of Rush's death.

One of the inexplicable incongruities of Caldwell's life was his unswerving friendship for Nathaniel Chapman, who was virtually Rush's successor in the chair of medicine at Pennsylvania, Barton serving in this capacity for only two sessions. Naturally one would have anticipated a preconceived aversion on Caldwell's part to the man, who was to attain the high position to which he had aspired in vain. Yet Chapman and Caldwell were the Damon and Pythias of a stormy period in Philadelphia medicine, full of politics and intrigue—Gross to the contrary, notwithstanding. A fellow spirit existed between the two as evidenced by this sentence of a letter from Caldwell to Chapman, "It is certainly true that as teachers and disputants, we have for many years held our station in the first rank of battle." Chapman admitted that his election over Caldwell had depended in a large measure on the friendship of the Board of Trustees. Furthermore, the frankness in admitting Caldwell's superior qualifications and in enlisting his aid in the preparation of his early courses apparently won Caldwell's undying allegiance. In 1816, at Chapman's request, Caldwell prepared an American edition of Cullen's "First Lines of the Practice of Physic," and as evidence of his sincerity Chapman used it as the text in his courses for ten to twelve years. In Caldwell's words, Chapman filled the chair of medicine "with a degree of ability and distinction which neither praise can brighten nor condemnation make dim." "The professor's reputation is now an electron *per se*, that shines with no borrowed light, but with an innate luster, which makes an element of itself. And as a man he ranks with the most high-minded and honourable of our race."

Caldwell was much in demand as an orator on state occasions. It is recorded that "he spoke in long, well rounded periods, and in a great sonorous voice." Gifted with magnificent physique and commanding presence, "he was a model of a lecturer, walking to and fro upon the platform like a caged lion. He had practiced oratory before the mirror, possessed fine powers of elocution and had a mind well stored with professional and general information." One of his numerous public addresses of this period was an eulogy of Caspar Wistar. In spite of his personal high estimate of the effort, an auditor, Dr. Horwitz, reported to Lyman Spalding that the oration was better adapted to Bunker Hill than to the occasion of a death notice, and the speaker's style to a soldier than to a physician. Reference in this address to a successor to Wistar in their midst (Dorsey) has been construed to constitute duplicity on Caldwell's part, since he was said to have encouraged the candidacy of Lyman Spalding. In its published form the eulogy contains no such remark, so that the reported passage probably represents merely the extemporaneous effusion of the speaker. In the correspondence between these men (Addendum F) Caldwell frankly admitted the strength of Dorsey's position and the futility of competition, were he a candidate for Wistar's chair. However, at the same time Caldwell was known to have supported the candidacy of Warren of Boston for the vacancy.

Caldwell's literary bent determined his succession to Nicholas Biddle as editor of the *Port Folio*. This monthly journal attained a position of national prominence during the War of 1812 by reason of the semi-official accounts of military and naval affairs personally reported by prominent officers in both branches of the service. Furthermore at intervals, biographic sketches of notables in civil and military affairs made their appearance in this periodical. In 1819,

Caldwell published his "Life and Campaigns of General Greene," which was vigorously reviewed in the *North American Review*. A valuable biographic compilation of this period, Delaplaine's "Repository of the Lives and Portraits of Distinguished American Characters," was edited by Caldwell and still constitutes an important historical reference.

In 1810, he instituted a course of lectures on medical jurisprudence; these were among the first delivered on this subject in America.

The establishment of a faculty of physical sciences in 1815 created a chair of geology and the philosophy of natural history, which Charles Caldwell sought as is evidenced by his letter to Lyman Spalding requesting a recommendation for the place. Whether a sincere desire to utilize Caldwell's talents as a teacher, or, as he suspected, an effort to prevent the diversion of students from Philadelphia by his proposed removal to the West, prompted his appointment is immaterial. His was an unruly tongue, and it is possible that this professorship may have been granted as a placebo to placate his ruffled feelings. Of the appointees to this faculty, only Cooper and Caldwell delivered the proposed courses of lectures, which were semipopular and attracted large and appreciative audiences from the city. Four courses were given in the three years of Caldwell's occupancy of the chair.

In a letter to Dr. Brown of Lexington, Kentucky, Caldwell urged the advisability of establishing a medical department at Transylvania University. This letter, presented to the Board of Trustees, was favorably acted upon. As a result, Caldwell was called to the chair of the institutes of medicine and clinical practice in August 1819. His appointment was in a measure enhanced by the favorable impression made by his Wistar eulogy on President Holley of Transylvania. Caldwell left Philadelphia, October 6, 1819. He remarks that on his arrival in Lexington, he found the country

as barren medically as Boone had found it agriculturally in the pioneer days. Caldwell was made the dean of the medical faculty, which constituted three "medical ciphers" and a fourth more useful professor, Dudley, who, though less talented, was a good worker. On the occasion of his inaugural speech, Caldwell was addressed by President Holley and answered him in Latin—"an expedient not without a salutary effect." In the body of the address, which was delivered in English, Caldwell developed the subject of the necessity and advantages of a school of medicine in Lexington.

Handicapped by lack of funds, books and essential equipment, Caldwell appealed to the Legislature at Frankfort in January for ten thousand dollars. One-half of this sum was granted, and it was further supplemented by six thousand dollars from the citizens of Lexington. The summer of 1820 was spent in propaganda work for the support of the new medical school. He toured the Mississippi Valley and adjoining states in search of candidates for admission. He also visited Philadelphia and New Orleans to secure materials and equipment for instruction during the next session. The second class was twice as large as the first, and by the session of 1826, Transylvania had attained the position of the second largest medical school in the United States.

Between the second and third sessions of the Medical Department of Transylvania University, Caldwell went abroad in search of books and materials for teaching. His observations on the personalities of notables with whom he came in contact are most interesting. In characteristic style he describes the elegant, impressive Sir Astley Cooper, whose mental attainments were, in Caldwell's opinion, beneath his reputation. The brusque John Abernethy, on the presentation of a letter of introduction, rebuffed Caldwell and was taken aback by Caldwell's prompt and unceremonious

withdrawal. Piqued by what he termed "quick-on-the-trigger" behaviour, Abernethy, nevertheless, made due amends and they parted friends.

France had not yet recovered from the disorder of her Revolution at the time of Caldwell's visit, and this circumstance facilitated his quest of medical literature. Rare and valuable editions either by the looting of libraries or the grim pressure of poverty had found their way to lowly bookstalls. But aside from his unexpected success in this direction, Caldwell enjoyed a wide social and medical acquaintanceship. Among his medical associates may be mentioned Cuvier, Dupuytren, Baron Larrey and Alibert; letters to LaFayette, Marquis Marbois and Marshal Grouchy also gave him social entrée.

The session of 1836-37 was a stormy one at Lexington. Two years after Caldwell's forceful address on the "Impolicy of Multiplying Schools of Medicine," in which he had denounced the possibility of Louisville as a medical center, he was engineering a movement to transplant the medical faculty from Transylvania to that city. The slow growth of Lexington was urged as a leading argument to effect this move. The secret agreement of the faculty to his plan met an unexpected obstacle in Dudley's announcement that anatomical materials would not be available in Louisville. An open split in the faculty resulted and Caldwell was the scapegoat. Those who had broken faith with him openly contested the project, while his adherents hid behind him and gave him no open support. In his valedictory of March 15, 1837, Caldwell vigorously attacked Dudley, who in turn brought charges of conspiracy against his assailant. Failure to respond to the summons of the Board of Trustees resulted in Caldwell's official dismissal from the faculty, a formality rendered pointless by his removal to Louisville some time previously.

Facilities for medical instruction were very limited at Louisville. Furthermore, the Louisville Medical Institute was openly opposed by the medical schools of Cincinnati and Lexington. Yet turning his back to his assured position in Lexington and flattering offers from Cincinnati, Caldwell chose to face the obstacles necessary for the establishment of a new school in Louisville. Again he carried the question of the financial support of the project to the townspeople. They subscribed twenty thousand dollars of the twenty five thousand dollars requested. After consultation with the Board of Managers, Caldwell was assigned to the chairs of the institutes of medicine, medical jurisprudence and clinical medicine, and Miller to the chair of obstetrics. Later, on Caldwell's recommendation, Yandall was appointed to the professorship of materia medica; Cooke, to the theory and practice of medicine and Mitchell, to chemistry. In the East, Caldwell induced Flint to join the faculty, but he proved inefficient through lack of application. An affiliation of Louisville Marine Hospital with the Medical Institute was effected by Caldwell. Then at his own expense he went to Europe in the interest of the school, and from personal funds procured considerable materials for medical instruction.

Appreciating in a measure the disadvantages of his age, in 1846 Caldwell confided his financial circumstances to the individual members of the Board of Managers, and indicated his desire to retire in 1850, by which time certain business arrangements would have materialized to assure him a comfortable income. Apparently he was ignorant of the resolution of the Board to dismiss him in 1847, which had only been defeated by the active opposition of Henry Miller and Samuel Gross. Unwilling to defer this action longer, in 1849, against the urgent counsel of his friends in the faculty, Caldwell was discharged by the

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Board. Naturally the old gentleman scented intrigue and charged Lunsford Pitts Yandall with leading a conspiracy against him, the basis of the plot being professional jealousy. Caldwell involved Henry Miller, Samuel D. Gross, Charles Short, Jedediah Cobb

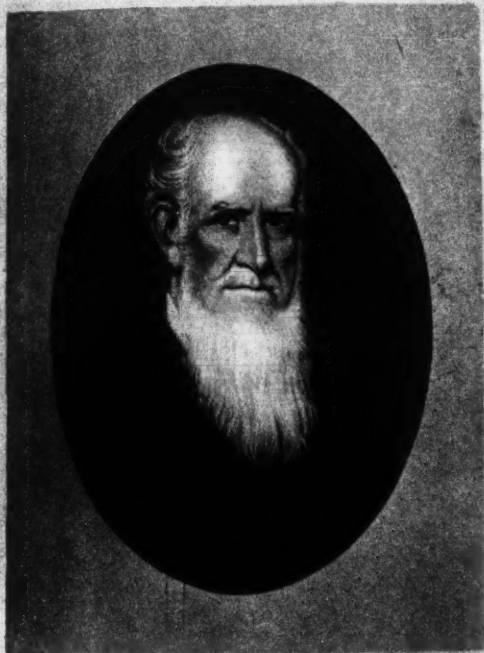
are refuted in Yandall's answer by direct quotations from Caldwell himself. Furthermore, the constitution and by-laws of the medical faculty, to which Caldwell had subscribed contained a clause of majority rule and set the age limit at 65 years.

Yandall then showed that Bartlett had been the first nominee for the vacancy created by Caldwell's dismissal.

In desperation and chagrin, Caldwell vainly sought reparation in public debate with any professor in the institute on any subject. The querulous old man interrogated members of the faculty on the cause of his removal, and age was the only reason assigned. He spurned the proffer of any academic honor from the medical school. According to Gross, he left Louisville to establish himself in Nashville where he attracted a small following; but no mention of this change of residence is found elsewhere.

The views regarding Caldwell's ability as a teacher are widely divergent. Samuel D. Gross affirms that while he was well liked by the students, he was a poor teacher. In his teaching, he supplanted medicine by philosophy and phrenology. Furthermore his methods were twenty-five years behind the times. Gross adds: . . . "I doubt that he ever made a physiologist of any of his pupils. He was a declaimer, a speculator, not up to the existing state of science, notwithstanding his learning, and he was therefore a miserable teacher." Lunsford P. Yandall, a favorite student at Lexington in 1823,

but scarcely an unbiased witness in later years, remarks that Dudley and Drake were even then more popular teachers than Caldwell. "Students, in truth, generally turned listlessly away from his polished discourse on Sympathy, Phrenology, the Vital Principle, and other kindred themes, and hurried off to the lectures on Materia Medica and Anatomy." Years seem to have mollified Yandall's natural resentment toward



Engraved by J. R. Lambdin from a painting by J. R. Lambdin

*Charles Caldwell M.D.*

CHARLES CALDWELL in his later years.  
(Engraved from a painting by J. R. Lambdin)

and Daniel Drake in this cabal. Of the last mentioned, he says "a gentleman very highly and justly distinguished for his powers of mind and useful attainments; and unfortunately not less so for his propensity to strategy and intrigue, which marred his usefulness and darkened his fame."

His attack on Yandall charged duplicity, mediocrity and scheming to advance personal ambitions. Most of Caldwell's accusations

Caldwell's attack and he later (1875) refers to his old patron as possessing qualities of person and mind "rarely equalled by a teacher of medicine." Juettner declares that "Caldwell was distinctly a man of prejudice, very voluble and with a marvelous facility for eloquently getting away from any subject he was discussing." On the other hand, David W. Yandall states, "He taught the physiology of his day, which was then largely the physiology of the ancients, but he taught it in so impressive a manner that his classes received it as gospel and voted him its greatest expounder." The testimonial of his last class at Louisville is a real tribute to his ability as a teacher. (Addendum G.)

Caldwell's views on medical education, while in the main the product of the day, are quite interesting. He maintained that only men trained in a certain district were capable of treating the diseases of that neighborhood. While admitting the advantages of hospital experience to small resident classes, he adds that "in whatever light it may be viewed, hospital practice, held out, as a lure to attract a large winter class, is a dishonourable hoax." The establishment of new schools would lead to a reduction in the size of classes; and he states, "It may be received as a maxim, that a medical school discouragingly limited in its classes, will be correspondingly limited, not to say actually superficial in its teaching, and cannot therefore be the parent of accomplished physicians."

Converted to a belief in phrenology by Gall and Spurzheim on his visit to Paris in 1821, Caldwell introduced this fallacious principle into medicine in America. At one time he remarked that through the study of phrenology "mankind at large are destined to receive, through all coming time, benefits and blessings of a magnitude and multiplicity which no human sagacity can compute." Caldwell advocated trephining in the treatment of mania on the basis of

phrenology. He lived to see the whole fabric discarded.

Strangely, Caldwell was a disbeliever in chemistry which he termed "that speculative science," a flight of fancy and a lineal descendant of alchemy. He remarks, "Even at the present day it is hardly short of lunacy to contend, as many chemists do, that chemical and vital forces are identical." Again he states, "it will require stubborn facts to convince me that man with all his corporeal and intellectual attributes, is nothing but a hydrophosphorated oxyde of azote." One of his most interesting allusions to his disbelief is contained in the following quotation: "I have never opposed microscopical or transcendental philosophy, in the true sense of the term. It is chemical philosophy I have opposed, that mongrel nondescript branch of science—no, not of science, but of blunders and balderdash—which identifies man in function with a German stove, or a Belgian beer-barrel."

Charles Caldwell was withal a man of wide interests and keen powers of observation. At an unexpected juncture is found a reference to the tremendous latent possibilities of Niagara Falls as a source of water power. An address before Miami University in 1832 presented the plea for a national university. Although a Southerner by birth, Caldwell prayed that the Union be held "as steadfast as nature and as lasting as time!" His essays on physical education and prison discipline enjoyed a wide circulation on both sides of the Atlantic. As to the city of Washington, he remarks that "the streets are too wide, and the buildings too low, to furnish any protection against the solar rays" with the result "that the summer temperature of its atmosphere will be but little below that of the inhospitable desert of Zaara." As early as 1801, he advised cold baths as an invigorating measure to counteract "that relaxation and lassitude so universally experienced during the intensity of our summer

heats." He then appealed for a regulation of diet, dress and drink to meet changes in external temperature. Caldwell strikes a singularly modern note when he deplores the dependence of American women on European oracles of fashion: "This unfortunate preference of fashion to reason . . . to common sense, in dress, cannot fail to prove occasionally destructive to delicate constitutions."

Of his intimate family life but little can be learned. He married twice, having divorced his first wife. A son by his first marriage attended Harvard and Caldwell deferred his removal from Philadelphia to Kentucky until the completion of his course at that institution.

The old gladiator was afflicted with erysipelas in May 1853. The local condition cleared up, but he never rallied completely; and although remaining mentally alert, he succumbed on June 9, 1853 in Louisville. He lies buried in Cave Hill Cemetery, Louisville, near the scenes of his last conquest and defeat.

Charles Caldwell was by Nature's gift and personal attainment a marked man of his day. Yet grim Fate, ably seconded by the machinations of his own morbid spirit of controversy, has construed to almost submerge him in the oblivion of time. Had he practiced his own preaching that "every man when in health, may, if he please, bridle his tongue," Fortune would have dealt more kindly with him. In his writings the gem of truth and the germ of discovery are so buried in the chaff of verbosity and the maelstrom of combat as to be largely lost to posterity. Of such it has been written, "For they have sown the wind and they shall reap the whirlwind." Early denied his fond ambition to succeed Rush in the chair of medicine at Penn-

sylvania, Caldwell's outlook on life was embittered and his attitude toward his associates seemed to invite antagonism rather than friendship. Active in the foundation of two medical schools beyond the Alleghenies, the unfortunate decision of the Board of Managers at Louisville snatched his hard earned laurels in the evening of his career. Fighting to the end, the battle scarred veteran recalls Henley's words,

Under the bludgeonings of chance  
My head is bloody but unbowed.<sup>2</sup>

#### ADDENDUM A

The incorporation of the Delaware and Schuylkill Canal Navigation Company on April 10, 1792 represents the first comprehensive project to supply Philadelphia with water. Its plan to carry water by a canal along the east bank of the Schuylkill from any point below Norristown was finally abandoned as impracticable. However, the recurrence of yellow fever epidemics led to repeated petitions to the Legislature and City Councils for an adequate water system. Benjamin H. Latrobe proposed to pump water from the Schuylkill throughout the city by means of a steam engine. His plan won in the face of vigorous opposition and in 1801 water was delivered to hydrants in various parts of the city through wooden pipes. In 1815 the water works were moved from Chestnut Street to Fairmount. Wooden water mains proved very expensive and their replacement with iron ones began in 1818. The water system of Philadelphia was further improved by the completion of the dam and the water wheels in 1822.<sup>3</sup>

June 27, 1804.

#### ADDENDUM B

I do solemnly certify that some time towards the close of the year 1802, or early in the year 1803, Dr. Woodhouse signified to me in unequivocal terms, (and spoke with considerable warmth on the occasion), that a volume of years, taken from the portrait in the College of Physicians, Philadelphia, the author is indebted to Dr. Francis R. Packard and Mr. Charles Perry Fisher.

<sup>3</sup> Abstracted from Current Topics, *Public Ledger*, Philadelphia, August 14, 1919.

<sup>2</sup> To Prof. William Snow Miller grateful acknowledgment is made for his continuous stimulating interest and material assistance in the preparation of this biographical sketch. For the photographic reproduction of the painting of Caldwell in his earlier



medical Theses, to the selection and superintendence of which Dr. Barton and himself had been appointed by their colleagues, the medical professors, *would never be completed*. I forbear relating the reasons which he assigned for this, as a promulgation of them would not be well calculated to promote harmony between him and Dr. Barton. What led to a conversation on this subject was, a *failure on the part of Dr. Barton* to comply with an engagement into which he had some time previously entered with Dr. Woodhouse and myself, to join in conducting a work somewhat on the plan of the Medical Repository.

I do further certify, that as late as last winter (I think it was in the month of February) Dr. Woodhouse told me, that in case of his meeting with an opportunity which might please him, he would probably *make a visit to Italy during the present summer*. A voyage to a distant country is not very compatible with the confinement and drudgery of an editor in the United States.

CH. CALDWELL.

#### ADDENDUM C

This afternoon immediately after Dr. Physick's lecture at the County Court house, South East Corner of 6th & Chestnut Street.

Dr. Caldwell will lecture on

Lunar influences in producing diseases.

The lecture to conclude with some new views on the subject of menstruation.

The medical class in general is invited to attend. Please to make this notice public.

Monday, January 8, 1810.<sup>4</sup>

#### ADDENDUM D

July 14, 1812.

You ask, what, medically speaking, we are doing in this city. I answer: Nothing. Nothing, I mean, towards promotion of the medical literature of our country. For at least six months past, so completely nauseated have I been with the sycophancy and subserviency of our physicians to the dogmas of a certain character (who, a footnote relates, was good Dr. Rush, detested

<sup>4</sup> Among Lyman Spalding's papers, was found this notice of Caldwell's lecture posted at the entrance to Dr. Physick's lecture room (Words from "Lunar" to "Menstruation" were written in.) The handwriting is like Caldwell's.

for success and universal admiration—Ed.) whose name I will not, because I need not mention, that I have, during that period abandoned medical reading as well as writing, and amused myself with polite and classical literature (Life of J. Smith and one of Commodore Barry). It is likely, however, that the winter will bring me back to my former habits.<sup>5</sup>

#### ADDENDUM E

Dr. Sewall's two lectures . . . were conceived about the year 1825 and 1826. Ever since that period, the Professor has been in protracted, and no doubt painful gestation and parturition of them; and his safe delivery is but of recent date. What less then could he expect of them, than that they would issue from the travail of his aching brain, like Minerva from the brain of the ruler of Olympus, adult in stature, full fraught with wisdom, "clad all in steel," and prepared for the highest and deadliest doings! And how miserable must be the disappointment, and how piteous the condition of the doating parent, when he shall find that instead of giving birth to a paragon of wisdom and war, he has incurred "the sharp toothed" sarcasm of the satirist: "*Montes parturiunt, et mus ridiculus nascitur!*" And the mouse shall be forthcoming.<sup>6</sup>

#### ADDENDUM F

CALDWELL'S LETTERS TO LYMAN SPALDING  
Dear Sir:

I have delayed replying to your last letter until I should have something to say, on which reliance might be placed.

Dorsey will, I apprehend, ask for the chair of Anatomy. If so, all competition may cease. He will certainly carry it from any competitor. It would afford me pleasure to serve your interest in that or any other respect. But where there is no chance of success, it would be uncandid in me to offer any encouragement.

From my friend, Mr. Reuben Haines, who will be in New York in a day or two, and whom I beg permission to introduce to your acquaintance, you will receive a copy of an Eulogium,

<sup>5</sup> Spalding, Dr. James Alfred: "Life of Lyman Spalding." Boston, 1916.

<sup>6</sup> Caldwell, Chas.: "Phrenology vindicated in a series of remarks, physiological, moral, and critical." November, 1834, *Christian Economy*.

I had the honour to deliver, a few days since, to the memory of poor Wistar.

My time was too short and otherwise too much occupied, to do justice to the subject; which indeed, no time, perhaps, would have enabled me to do. Such as the performance is, however, I beg you to accept it, and to believe me, in perfect truth,

Dear Sir,

Your friend and obedient servant,

Philada., March 3rd, 1818. CH. CALDWELL.

Philada., Nov. 16th, 1818.

Dear Sir,

Let me hasten to inform you that arrangements are already made for Dr. Physick to supply the vacancy in the Anatomical chair of our medical school, during the present session.

On the subject of a permanent successor to that chair, nothing is yet done and, as far as I know, but little thought of.

I shall, notwithstanding, have the pleasure of making known the purport of your letter, conformably to your request.

Should any determination in your favor be made, intelligence shall be communicated to you without delay.

Present me to Mrs. Spalding, and believe me, very sincerely,

Your obedient servant,

CH. CALDWELL.

#### ADDENDUM G

Louisville, March 6, 1849.

We, the undersigned, members of the graduated class of the Medical Department, University of Louisville, for the session 1848 and '49,

unanimously adopt the following preamble and resolutions:

Whereas, we have attended the lectures of our venerable Professor of the Institutes of Medicine for two sessions; and whereas, in all human probability, he will not continue many years longer to hold his place in the University, which we are proud to cherish as our alma mater; therefore—

*Resolved*, 1st. That we feel it to be our privilege and take great pleasure in expressing our high regard for him, as a man of profound learning, and one of the ablest advocates and most efficient teachers of the medical profession.

*Resolved*, 2d. That his lectures on all the subjects pertaining to his chair, have been able, thorough, and instructive; and that the imputation, therefore, that he is superannuated, or that his lectures are, in any way inferior to those of the other professors, is unjust, unfounded, and false.

*Resolved*, 3d. That, in consideration of the deep interest he has always manifested in our advancement in the study of the philosophy of medicine and his untiring efforts to promote the same, we deeply regret the prospect of his vacating his chair, which he has so long and so ably filled; and for his courteous and affable manners to us as pupils, and all the kind attentions we have received from his hands, we tender to him the grateful thanks of his affectionate pupils and humble servants.

Signed in behalf of the class by

W. W. McCOMAS

J. RODMAN

F. L. MADDEN.

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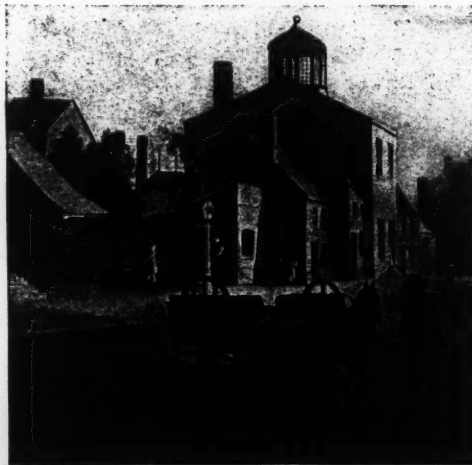
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# LAFAYETTE HOUGHTON BUNNELL, M.D., DISCOVERER OF THE YOSEMITE

By HOWARD A. KELLY, M.D.

BALTIMORE, MD.

FEW great discoveries have passed into history without the controversy of conflicting claims, whether it be the discovery of an America or of a telephone, of antisepsis or a Sims's speculum, or the operation for fistula. The thoughtful student of history will, I think, conclude that there is often much to be said in justification of many of these forgotten priority disputants, and that almost invariably some meed of credit denied by a careless posterity is their due.

The busy working world, dramatic in its impulses, and too pressed to stop to analyze claims to adjudicate varying degrees of merit, gladly seizes a prominent, much advertised name which has caught its fancy and adopts that as the best peg for memory's facts. If, as with Marion Sims in his vesicovaginal fistula operation, the world learns that he has persisted through years of discouraging effort, and through thirty or forty operations on a poor negro wench until at last the success, which had eluded centuries of effort, crowns his skill, and if it then sees him quit his plantation home and journey abroad to teach the great surgeons of the world how to operate, and then to cap the climax beholds him bemedalled and honored by kings, queens and potentates, while arousing the jealousy of eminent competitors—then the world gives a sigh of satisfaction and rests content, and writes that name down on the page of history as the indisputable claimant. Usually the world is correct in its estimate, but it still remains the grateful task of the student of history to scrutinize more closely the events leading up to the great discovery and to assign varying degrees of merit to forgotten heroes who have toiled to lay the foundation on

which to erect the monument. I do not note that this subsequent investigation of the contributing factors with the assigning of a share of credit to others has ever yet hurt the principal claimant; rather is his merit enhanced as he stands thus *primus inter pares*.

With these obvious and salutary reflections I would lead up to a matter in which, among other claimants, not too pressing, the true discoverer has been forgotten, and I would here reassert his claim to an important discovery; I refer to Lafayette Houghton Bunnell, M.D., the discoverer of the Yosemite Valley of California in the year 1851. The importance of the matter lies in the fact that in all this vast country there exists no such remarkable grandiose scenery as in the Yosemite; we are glad, therefore, to hail a fellow craftsman as the one whose imagination was first fired by the mystery of the park, who kept it in mind and eagerly embraced the first opportunity to enter, and who journeyed in with a juvenile enthusiasm and then and there proposed its name—"Yosemite."

I will relate how my interest in Bunnell was awakened, and then give his history, and summarize his claims.

Dr. William Browning, the well-known neurologist and bibliographer, wrote an entertaining paper entitled "Some of our Medical Explorers and Adventurers."<sup>1</sup>

In the *Medical Record* for November 23, 1918, appeared a letter from Dr. H. E. W. Barnes, of Santa Ana, California, in which, after expressing his interest in Dr. Browning's article, he regrets the omission of Dr. Bunnell's name, cites his achievement in the Yosemite and states that "he wrote a book on this

<sup>1</sup> *Med. Rec.*, October 26, 1918.

discovery that is a frontier classic. To him and his courageous companions forever will remain the honor of first visiting this mysterious valley and making known to the world the majesty and splendor of its unsurpassed scenic beauty. . . . It would be scant justice to the memory and merit of the intrepid Dr. L. H. Bunnell if his name is not included in the list of Dr. Browning's immortals."

Inasmuch as there was here clearly a chance to enhance the honor of our profession, I wrote at once to Dr. Barnes, to Dr. Browning, to the publishers of Bunnell's book, to libraries in localities where the name of Bunnell might be known, or where large collections of books might be found, and to many individuals. Replies were courteous, but for some time absolutely no information was forthcoming; Bunnell seemed to be but a name, almost a myth, although the author of an interesting book. In time, tiny clues rewarded persistent efforts until gradually from many threads has been woven a complete history of this man who was the means of bringing to notice this wonderful *terra incognita*.

Lafayette Houghton Bunnell was born in Rochester, New York, in March, 1824, son of Bradley Bunnell, a physician, and Charlotte Houghton. Bradley Bunnell, the father, was born in New London, Connecticut, in 1781 and seems to have lived in different places in New York State. In 1828 he had been in Detroit, Michigan, practised medicine, had made friends with many of the early pioneers, and purchased land. His name appears in the Detroit city directory for 1837.

Lafayette's mother, Charlotte Houghton, came of the family after whom Houghton Square, London, was named. She was born in Windsor, Vermont, daughter of James Houghton and granddaughter of James Houghton, patriot in the American Revolution, who was killed by a Tory in a local affray. Douglas Houghton, dis-

tinguished naturalist and physician, was a cousin of Charlotte Bunnell's; he was born in Troy, New York, September 21, 1810 and from his youth was interested in nature. He experimented with percussion powder (but lately invented), and bore the marks of an explosion. He graduated at the Rensselaer Polytechnic Institute and was afterward a member of the faculty. In 1831 the Medical Society of Chautauqua County gave him a license to practise, and he went as physician and botanist on the Henry R. Schoolcraft Government Expedition to explore the sources of the Mississippi River. He had an extensive knowledge of the flora of the northwest, practised in Detroit from 1832 to 1837, projected the Geological Survey of Michigan and was appointed state geologist. In 1838 he gave scientific lectures at Detroit, and was mayor of Detroit in 1842. While at work on a new government survey he was drowned in a heavy sea in Lake Superior, October 13, 1845.

This man was an inspiration in the life of Lafayette Bunnell, who tells of listening to his stories of adventure, declaring that "these conversations were overheard by an observant child of good memory, and they made him ambitious of adventure, and just a little romantic. They were not the least injurious from a moral point of view, for he thought to emulate Dr. Houghton in usefulness, but alas for boyish imaginings. Dr. Houghton's skill as a geologist pointed to millions hidden in the earth, and he was drowned in Lake Superior, a victim to its angry waters, on its rock-bound shores."

Another kinsman of Mrs. Bunnell's was Edward Houghton "to whom was conveyed the supposed title of Jonathan Carver to the vast area known as the 'Carver tract.'"

Dr. Bradley Bunnell (the father) and his wife had twelve children, six of whom died in childhood. In 1832, when Lafayette was

eight years old, the family moved to Detroit, then a small French village, mostly dependent for its trade upon furs and peltries, and a gradually increasing demand for the white fish caught in the river. Another source of revenue was the lumber—pine and black walnut—cut from the virgin forests. Bunnell says: "Eastern settlers began to come into the then new territory to occupy a part of the large area of vacant land, and, with their arrival, some money was put in circulation, but there was a good part of trade carried on by means of barter."

Just before going up to Detroit, Lafayette had Asiatic cholera and remembered "its outbreak among the soldiers of the regular army on their way to take part in the Black Hawk War." General Winfield Scott commanded the soldiers who were going to Fort Dearborn and several were quarantined at Detroit.

Lafayette went to O'Brien's Catholic school, because "it was the best," although he was not a Roman Catholic. He tells of attending the funeral services of the Reverend Gabriel Richard, "Good Father Richard," founder of the Indian Missions of the Lakes (September 13, 1832), and says that Father Baraga, famous for his good influence over the Ottawa and Chippewa Indians, and Father Richard were looked upon as saints. He recalls the sober Ottawa Indians "converted to an honorable religious life, by the Catholic Missionary Fathers," becoming "victims of their appetites for raw whiskey, that they drank not as most white men drink, but poured down their throat until oblivion cast its mantle over all that was human in their actions. At that date . . . and after . . . the Ottawas, and the older Chippewa bands of the upper lake region, assembled at Detroit to receive the annuities given them by our Government, and then, some of the Indians of the same bands would cross over to the Canadian shore of the strait, and there receive the subsidy that the British policy had continued as a

reward for their services in scalping Americans, and harassing our frontier during the war of 1812."

Bunnell was in close sympathy with Indian and mixed-blood boys and French traders, and boasts, "I was vain enough not to allow an Indian (*for I was a white American*) to do what I could not. Or if he did, it was not for long, for I practised his art of swimming in the swift cool current of the Detroit river, paddled his birchen canoes until I could excel him in speed and endurance, and when the ice formed on that treacherous stream, I would skim over the thin ice on skates where his instinct would not allow him to venture. My folly, upon one occasion, met its reward in a very cold bath in the river, during which I was nearly drowned, but the lesson I remembered. The spirit of rivalry soon extended to my French boy companions, and the result was that, by this close association, I soon 'picked up' a pretty good knowledge of bad French and some good Indian."

He knew well the families of the "old French fur traders," particularly Old Daniel Campau and his brother Barnabas. Old Daniel had accompanied General Cass to the sources of the Mississippi in 1820, then became a trader and invested largely in land. "The Cass farm and the Campau lands comprised the greater part of Detroit" at that time.

John B. Desnoyer was a "fur trader of long experience," whose daughter Matilda married Willard Bradley Bunnell, brother of our Lafayette. She was a splendid type of pioneer woman, refined, domestic and modest, yet brave and ready to meet emergencies. She could converse fluently with the Chippewas, Winnebagoes and Sioux and knew something of other dialects, and the Indians "respected and feared her although only a 'woman.'"

Family reverses forced young Bunnell to leave school and go to work with Benjamin



LeBritton, a druggist in Detroit. He was boarding at the American Hotel and, after it was destroyed by fire, at the Wales Hotel erected on its site. Here lived Henry R. Schoolcraft with his invalid wife and her Indian maid. With the maid Bunnell used to talk Chippewa; finding that her dialect differed from his, she explained it by saying that his Chippewa was French Chippewa while hers was real *old* Chippewa, "and I have never forgotten her distinction nor its usefulness when I hear Indian names lacerated. . . . I think that the influences that surrounded my boyhood gave me a taste for frontier life, and certainly 'Old MacSob,' an American Chippewa, as he called himself, while annually staying with us during payments, gave shape to my determination to visit the upper lake country. . . . The old fellow once taught my father a lesson in hospitality that I have never forgotten. MacSob, who had been fishing through the ice with his little band, and selling his trout to shippers, came down to Detroit on the first boat. On that vessel were some excellent Mackinaw trout packed in ice, a large one of which my father bought and had it baked for dinner on the day of old Mac's arrival. Thinking to please the old Indian, after we had left the table he had Phyllis, a mulatto serving woman that had been in the family for years, place a plate for the old warrior, and invited him to partake of the trout. Old MacSob looked at the fish and then at 'Black Meat,' as he always called Phyllis, and cried out, 'Take him away! too much fish! all winter fish, fish, damn the fish! Black Meat, give me some pork!'" The moral applied by Dr. Bunnell's father was: "Never give a guest what he has been feeding upon at home."

The elder brother Willard Bunnell, who had been on the Lakes as cabin boy, wheelman and pilot, gave up this life on the water after his marriage, and went into the fur trade, locating at Little Bay du Noquet, near the "present site of Escanaba;" he

asked his father to let Lafayette "come up and assist him."

Lafayette Bunnell was seventeen years old but, as he says, he "had been one of the *original drummers and collectors* for the drug house I was with, and for my age was a pretty good student of human nature; so that after some considerable delay my father gave his consent to my going." When he reached the point of meeting, his brother had departed and it was spring before he reached him. Willard was concerned about his health, fearing he would have "the family's hereditary disease, consumption of the lungs," and wished to move to the drier climate of the upper Mississippi. They were undecided as to the exact location for settling; Alexander Grignon, a trader, urged the mouth of the river and "actually pictured to us, in graphic language, the lumber trade that would spring up, and the cities that would arise . . . but we were too obtuse to see things from his point of view." The choice finally lay between Trempealeau and Prairie La Crosse and Bunnell tells of Willard's "picking up a chip and spitting on it, after the fashion of school-boy days, he said: 'Wet or dry—wet up, we go up; wet down, we go down.' It came down wet up, and that being my choice, we started up the river. By just such absurd and unreasonable incidents are our lives sometimes directed."

They reached LaCrosse in June, 1842; passing "Catlin's Rocks" where Bunnell plainly saw the name of the artist, George Catlin (1796-1872), painted in red on the rocks (Catlin had painted Indian portraits in 1835). They moved on to Trempealeau, east of the river, and settled there. Later they settled at Holmes's Landing, where the winter of 1842-1843 was spent. Bunnell's chief comment of this period is that "the comet stayed with us all winter." When the ice left the river they returned to the cabin at Trempealeau, which began to take on a homelike aspect, aided by a fine garden.

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Bunnell says that his brother caught the secret of success by "never allowing a weed or blade of grass to grow in his garden."

Bunnell was quick to learn the sign language and had a gift of making friends with the Indians; his Winnebago name was "Woon-gua-shu-shig-gar." He was then a child of the West in her pioneer days, an intrepid, restless, aggressive spirit, with but an ordinary school education, a keen observer with a retentive memory and powers of observation of localities and natural events equal to an Indian. His large experience on the frontier made him a natural leader in coping with the raw energies of nature. In due time he expressed himself in writing freely and well, though with little polish. "Winona," written in his later years, is a storehouse of precious facts relating to early days in the Middle West, especially along the upper Mississippi; here in retrospect we sit by the cradle of a great empire. One of the most interesting episodes is an account of an adventurous trading trip with a companion through Lake Pepin. Before starting, Bunnell had banked wood near LaCrosse, Wisconsin, and sold it. There was a scarcity of pilots and he was offered a position. He says: "I declined the offer, but my taste and passion for beautiful scenery led me to study the river whenever I was travelling upon it." At times he took the pilot's place without compensation, and later he received pay for running steamboat spars to St. Louis or hardwood logs for furniture to other places. Curiously enough, although a good marksman, he was not, like many similarly placed, a good hunter.

In the autumn of 1843 he decided upon a claim at LaCrosse and plowed a furrow with six yoke of cattle around 160 acres, taking in the greater part of the lower section of the present city.

In 1844 he went after some lumber at Beef Slough, and worked the scheme with success; put some money into a lumber

camp on the Chippewa, then started to bring his father and the family to occupy the claim at LaCrosse. His father had consented to migrate, hoping the change would improve the condition of three members of his family (a daughter, son, and grandson) who had consumption. These three died at LaCrosse in the spring of 1845. During the summer of 1845 a messenger came to Bunnell's logging camp, seven or eight miles below the mouth of the Eau Claire River, with news of his mother's death from heart disease. His father had now only a young daughter to live with, and was lonely and discontented, longing for his old home in Detroit and declaring that the younger Bunnell was wasting his life in a wilderness that would not be settled in fifty years. Bunnell says:

He spoke of the howling, drunken Indians and the not much less brutal white men who made them drunk, and taken as he delivered it, it was a strong plea for my return with him to Detroit. I then had no thought of yielding to his persuasions, but told him of my prospects of realizing a goodly sum from my venture on the Chippewa, and ended by giving him ample funds, which I had saved, to return with my young sister to Detroit, where she had associations that were dear to her, and I went back to my business on the Chippewa, and also to fill a contract I had in St. Louis for spars of large size for the lower river trade.

His father remained in LaCrosse until the next spring, then went to Detroit. Later, while Bunnell was in California, he returned to live in the "howling wilderness," and died of strangulated hernia, at Homer in 1856.

Willard Bunnell and his family crossed the river from Trempealeau and settled at a place first known as Bunnell's Landing which later received its present name of Homer, in honor of the birthplace of Willard Bunnell, Homer, New York. Lafayette Bunnell helped to build the first "permanent house" at Homer, Minnesota,

and after his many adventures returned there and spent his last days in this house erected in 1844.

He served in the Mexican War in 1847, and in 1849 it was inevitable, with his character and training, that he should seek gold in California. His experiences in California form interesting reading in his own words, in his book "Discovery of the Yosemite" (1880). He says in the beginning of his book:



*L. H. Bunnell*

Autographed portrait of LAFAYETTE HOUGHTON BUNNELL.

During the winter of 1849-50, while ascending the old Bear Valley trail from Ridley's ferry, on the Merced river, my attention was attracted to the stupendous rocky peaks of the Sierra Nevadas. In the distance an immense cliff loomed, apparently to the summit of the mountains. Although familiar with nature in her wildest moods, I looked upon this awe-inspiring column with wonder and admiration. While vainly endeavoring to realize its peculiar prominence and vast proportions, I turned from it with reluctance to resume the search for coveted gold; but the impressions of that scene were indelibly fixed in my memory. Whenever an opportunity afforded, I made inquiries concerning the scenery of that locality. But few of the miners had noticed any of its special peculiarities. On a second visit

to Ridley's, not long after, that towering mountain, which had so profoundly interested me was invisible, an intervening haze obscuring it from view. A year or more passed before the mysteries of this wonderful land were satisfactorily solved.

The events which led to the discovery are as follows: James D. Savage, a trader, had two stores or trading posts, one on little Mariposa Creek, about 20 miles south of the town of Mariposa, the other on Fresno River, where friendly Indians used to congregate. Savage took an Indian chief, José Jerez, to San Francisco to witness the celebration of the admission of California as a state—October 29, 1850. While there the old chief became drunk and quarrelsome and Savage struck him. The Indian upon his return home roused his fellows against Savage and both his stores were attacked. Savage thought that an Indian war was beginning, and commenced to raise a volunteer battalion. He made an appeal for arms to the Governor, John McDougal, when hostilities began. After the "Mariposa Battalion" was formed and assigned to duty by Governor McDougal, there was a "period of preliminaries"; United States Commissioners arrived in camp, about fifteen miles below Mariposa village, and a few Indians came to parley with them; among the visiting Indians were Vow-ches-ter, chief of one of the more peaceful bands, and Russio, a Mission Indian. Vow-ches-ter said the mountain tribes would not make peace. Russio said, "The Indians in the deep rocky valley on the Merced River do not wish for peace, and will not come in to see the chiefs sent by the great father to make treaties. They think the white man cannot find their hiding places and that, therefore, they cannot be driven out." Vow-ches-ter further declared: "In this deep valley spoken of by Russio, one Indian is more than ten white men. The hiding places are many. They will throw rocks down on the white



men, if any should come near them. The other tribes dare not make war upon them, for they are lawless like the grizzlies, and as strong. We are afraid to go to this valley, for there are many witches."

Bunnell after this talk asked Savage, the interpreter, if he had ever visited the "deep valley" mentioned by the Indians. Savage first said that he had, but in a later conversation with Bunnell said that he was mistaken and explained as follows:

Last year while I was located at the mouth of the South Fork of the Merced, I was attacked by the Yosemite Indians, but with the Indian miners I had in my employ, drove them off, and followed some of them up the Merced River into a cañon, which I suppose led to their stronghold, as the Indians then with me said it was not a safe place to go into. From the appearance of this rocky gorge I had no difficulty in believing them. Fearing an ambush, I did not follow them. It was on this account that I changed my position to Mariposa Creek. I would like to get into the den of the thieving murderers. If ever I have a chance I will smoke out the Grizzly Bears (the Yosemite Indians) from their holes, where they are thought to be so secure.

Bunnell says:

The deliberative action on the part of the commissioners, who were very desirous of having the Indians voluntarily come in to make treaties with them, delayed any active cooperation on the part of our battalion until the winter rains had fully set in. Our first extended expedition to the mountains was made during the prevailing storms of the vernal equinox, although detachments had previously made excursions into the country bordering upon the Sierras. This region, like parts of Virginia, proved impassable to a mounted force during the wet season, and our operations were confined to a limited area. It was at last decided that more extended operations were necessary to bring in the mountain tribes.

Bunnell next describes the starting out:

Notwithstanding a storm was gathering, our preparations were cheerfully made, and when

the order to "form into line" was given it was obeyed with alacrity. No "bugle call" announced orders to us; the "details" were made quietly, and we as quietly assembled. Promptly as the word of command "mount" was given, every saddle was filled. With "forward march" we naturally filed off into the order of march so readily assumed by mounted frontiersmen while traveling on a trail.

We left our camp as quietly and as orderly as such an undisciplined body could be expected to move, but Major James D. Savage said that we must all learn to be as still as Indians, or we would never find them.

This battalion was a body of hardy, resolute pioneers. Many of them had seen service, and had fought their way against the Indians across the plains; some had served in the war with Mexico and had been under military discipline. . . .

The temperature was mild and agreeable at our camp near the plain, but we began to encounter storms of cold rain as we reached the more elevated localities.

Major Savage being aware that rain on the foothills and plain at that season of the year indicated snow higher up, sent forward scouts to intercept such parties as might attempt to escape, but the storm continued to rage with such violence as to render this order useless, and we found the scouts awaiting us at the foot of a mountain known as the Black Ridge. This ridge is a spur of the Sierra Nevadas. It separates the Mariposa, Chowchilla, Fresno and San Joaquin Rivers on the south from the Merced on the north.

An account is given of the approach to the village of the Yosemite Indians; then Bunnell says:

We suddenly came in full view of the valley in which was the village, or rather the encampments, of the Yosemite Indians. The immensity of rock I had seen in my vision on the Old Bear trail from Ridley's Ferry was here presented to my astonished gaze. The mystery of that scene was here disclosed. My awe was increased by this nearer view. The face of the immense cliff was shadowed by the declining sun; its outlines only had been seen at a distance. This towering mass.

"Fools our fond gaze, and greatest of the great  
Defies at first our Nature's littleness,  
Till, growing with (to) its growth, we thus dilate  
Our spirits to the size of that they contemplate."

That stupendous cliff is now known as "El Capitan" (the Captain) and the plateau from which we had our first view of the valley, as Mount Beatitude.

It has been said that it is not easy to describe in words the precise impressions which great objects make upon us. I cannot describe how completely I realized this truth. None but those who have visited this most wonderful valley can even imagine the feelings with which I looked upon the view that was there presented. The grandeur of the scene was but softened by the haze that hung over the valley—light as gosamer—and by the clouds which partially dimmed the higher cliffs and mountains. This obscurity of vision but increased the awe with which I beheld it, and as I looked, a peculiar exalted sensation seemed to fill my whole being, and I found my eyes in tears with emotion.

During many subsequent visits to this locality, this sensation was never again so fully aroused. It is probable that the shadows fast closing all before me, and the vapory clouds at the head of the valley, leaving the view beyond still undefined, gave a weirdness to the scene, that made it so impressive; and the conviction that it was utterly undescrivable added strength to the emotion. It is not possible for the same intensity of feeling to be aroused more than once by the same object, although I never looked upon these scenes except with wonder and admiration.

... Our imagination had been misled by the descriptive misrepresentations of savages, whose prime object was to keep us from their safe retreat, until we had expected to see some terrible abyss. The reality so little resembled the picture of imagination, that my astonishment was the more overpowering.

To obtain a more distinct and *quiet* view, I had left the trail and my horse and wallowed through the snow alone to a projecting granite rock. So interested was I in the scene before me, that I did not observe that my comrades had

all moved on, and that I would soon be left indeed alone. My situation attracted the attention of Major Savage—who was riding in rear of the column—who hailed me from the trail below with "you had better wake up from that dream up there, or you may lose your hair; I have no faith in Ten-ic-ya's statement that there are no Indians about here. We had better be moving; some of the murdering devils may be lurking along this trail to pick off stragglers." I hurriedly joined the major on the descent, and as other views presented themselves, I said with some enthusiasm, "If my hair is now required, I can depart in peace, for I have here seen the power and glory of a Supreme Being; the majesty of His handywork is in that 'Testimony of the Rocks'. That mute appeal—pointing to El Capitan—illustrates it, with more convincing eloquence than can the most powerful arguments of supplanted priests." "Hold up, Doc! you are soaring too high for me; and perhaps for yourself. This is rough riding; we had better mind this devilish trail, or we shall go *soaring* over some of these slippery rocks." We, however, made the descent in safety.

Bunnell says:

My devout astonishment at the supreme grandeur of the scenery by which I was surrounded continued to engross my mind. . . .

After supper, guards stationed, and the camp fires plentifully provided for, we gathered around the burning logs of oak and pine, found near our camp. The hearty supper and cheerful blaze created a general good feeling. Social converse and anecdotes—mingled with jokes—were freely exchanged, as we enjoyed the solace of our pipes and warmed ourselves preparatory to seeking further refreshment in sleep. While thus engaged I retained a full consciousness of our locality; for being in close proximity to the huge cliff that had so attracted my attention, my mind was frequently drawn away from my comrades. After the jollity of the camp had somewhat subsided, the valley became the topic of conversation around our camp fire. None of us at the time surmised the extreme vastness of those cliffs; although dark, we had seen El Capitan looking down upon our camp, while the "Bridal Veil" was being wafted in the breeze. Many of us *felt* the mysterious grandeur

of the scenery, as defined by our limited opportunity to study it. I had—previous to my descent with the major—observed the towering height over us of the old "Rock Chief," and noticing the length of the steep descent into the valley, had at least some idea of its solemn immensity.

It may appear *sentimental*, but the coarse jokes of the careless, and the indifference of the practical, sensibly jarred my more devout feelings, while this subject was a matter of general conversation; as if a sacred subject had been ruthlessly profaned, or the visible power of Deity disregarded. After relating my observations from the "old Bear Valley Trail," I suggested that this valley should have an appropriate name by which to designate it, and in a tone of pleasantry said to Tunnehill, who was drying his wet clothing by our fire, "You are the first white man that ever received any form of baptism in this valley (Tunnehill with the mule he was riding had during the trail been immersed, unexpectedly taking a plunge bath in the ice-cold waters of the Merced), and you should be the proper person to give a baptismal name to the valley itself." He replied, "If whiskey can be provided for such a ceremony, I shall be happy to participate; but if it is to be another cold-water affair, I have no desire to take a hand. I have done enough in that line for tonight." Timely jokes and ready repartee for a time changed the subject, but in the lull of this exciting pastime, someone remarked, "I like Bunnell's suggestion of giving this valley a name, and tonight is a good time to do it." "All right—if you have got one, show your hand," was the response of another. Different names were proposed but none were satisfactory to a majority of our circle. Some romantic and foreign were offered, but I observed that a very large number were canonical and Scripture names. From this I inferred that I was not the only one in whom religious emotions or thoughts had been aroused by the mysterious power of the surrounding scenery.

As I did not take a fancy to any of the names proposed, I remarked that "an American name would be the most appropriate;" that "I could not see any necessity for going to a foreign country for American scenery—the grandest that had ever yet been looked upon. That it

would be better to give it an Indian name than to import a strange and inexpressive one; that the name of the tribe who had occupied it would be more appropriate than any I had heard suggested." I then proposed that we give the name of Yo-sem-i-ty, as it was suggestive, euphonious, and certainly *American*; that by so doing, the name of the tribe of Indians which we met leaving their homes in this valley, perhaps never to return, would be perpetuated." I was here interrupted by Mr. Tunnehill, who impatiently exclaimed: "Devil take the Indians and their names! Why should we honor these vagabond murderers by perpetuating their names?" Another said: "I agree with Tunnehill—the Indians and their names. Mad Anthony's plan for me! Let's call this Happy Valley." In reply I said to the last speaker: "Still, for a young man with such *religious tendencies* they would be good objects on which to develop your Christianity." Unexpectedly a hearty laugh was raised, which broke up further discussion, and before opportunity was given for any others to object to the name, John O'Neil, a rollicking Texan of Captain Boling's Company, vociferously announced to the whole camp the subject of our discussion, by saying, "Hear ye! Hear ye! Hear ye! A vote will now be taken to decide what name shall be given to this valley." The question of giving it the name of Yo-sem-i-ty was then explained and upon a *viva voce* vote being taken, it was almost unanimously adopted. The name that was then and thus adopted by us, while seated around our camp fires, on the first visit of a white man to this remarkable locality, is the name by which it is now known to the world.

Bunnell says: "When we sought our repose it was with feelings of quiet satisfaction that I wrapped myself in my blankets, and soundly slept."

The signification of the name, "a grizzly bear," was not at that time generally known to the Battalion, Bunnell says, and the pronunciation was not uniform. Bunnell considered Major Savage the best authority for the correct pronunciation, and he said that Ten-ie-ya (the old chief of the tribe) pronounced it Yo-sem-i-ty although



same other bands pronounced it O-soom-i-ty, and said it signified "a full-grown grizzly bear," and was given to Ten-ie-ya's band because of their "lawless and predatory character."

Lieutenant Moore, of the U. S. A., in his report of an expedition to the valley in 1852, substituted *e* as the terminal letter, in place of *y* in use by us; no doubt thinking the use of *e* more scholarly, or perhaps supposing Yosemite to be of Spanish derivation. This orthography has been adopted, and is in general use, but the proper pronunciation, as a consequence, is not always attainable to the general reader.

Ten-ie-ya repudiated the name for the valley, but proudly acknowledged it as the designation of his band, claiming that when he was a young chief, this name had been selected because they occupied the mountains and valleys which were the favorite resort of the Grizzly Bears, and because his people were expert in killing them. That his tribe had adopted the name because those who had bestowed it were afraid of "the Grizzlies" and feared his band.

"Ah-wah-ne," the Indian name for their valley, was not known to Bunnell until the name "Yosemite" had been generally accepted. In 1855, J. M. Hutchings visited and published an account of the Yosemite, giving the name of Yo-Hamite, but after a long discussion of this point, he wrote, "Had we before known that Doctor Bunnell and his party were the first whites who entered. . . we should long ago have submitted to the name Dr. Bunnell had given it, as the discoverer of the valley."<sup>2</sup>

Hutchings later says, "For early records of the Valley I am mainly indebted to Dr. L. H. Bunnell, who was not only one of its first visitors and discoverers, but its earliest and principal historian."<sup>3</sup> He says

<sup>2</sup> Hutchings, J. M.: *Scenes of Wonder and Curiosity in California*. New York and San Francisco, 1871.

<sup>3</sup> Hutchings, J. M.: *In the Heart of the Sierras; the Yosemite Valley*. Yosemite Valley and Oakland, Cal., 1886.

of Bunnell's book that it is "an invaluable and deeply interesting narrative of personal observation and adventure."

Dr. Bunnell wrote on the Yosemite, his statement appearing in Hutchings's *California Magazine*, signed by himself and certified to by two members of the California legislature—James M. Roan and George H. Crenshaw—who were in the expedition. Attention once called to the Yosemite and its discovery, voices for other claimants were heard. The one which seems to be most worthy of consideration was that of Joseph Walker. Mr. Williams says that—"History has done scant justice to Joseph Reddeford Walker. . . He was the first white visitor to the Yosemite region." The claim has been made that he "discovered and camped in the Yosemite Valley. . . The evidence available hardly seems to sustain this claim in full. . . On his gravestone in Alhambra Cemetery, at Martinez, Cal., is the following: 'Camped at Yosemite, November 13, 1833'. . . We may accept 'Camped at Yosemite,' but are we warranted in assuming that 'at' means 'in'?"<sup>4</sup> Mr. Williams adds, "Dr. Bunnell's account of it, and of the Indian war of 1851, of which it is a part, is a frontier classic, with Tenaya as its hero."

In 1880 Walker's claim was "set up" in the *San José Pioneer*, and answered by Bunnell in the same paper. Bunnell says, in his book:

I cheerfully concede the fact. . . that "His were the first white man's eyes that ever looked upon the Yosemite" *above* the valley, and in that sense, he was certainly the original white discoverer. The topography of the country over which the Mono trail ran, and which was followed by Capt. Walker, did not admit of his seeing the valley proper. The depression indicating the valley, and its magnificent surroundings could alone have been discovered, and in Capt. Walker's conversations with me at

<sup>4</sup> Williams, J. H.: *Yosemite and Its High Sierras*. Takoma and San Francisco, 1914.

various times while encamped between Coulter's valley and the Yosemite, he was manly enough to say so. . . . I told Capt. Walker that Ten-ie-ya had said that, "A small party of white men once crossed the mountains on the north side, but were so guided as not to see the valley proper." With a smile the captain said: "That was my party, but I was not deceived, for the lay of the land showed there was a valley below; but we had become nearly barefooted, our animals poor, and ourselves on the verge of starvation, so we followed down the ridge to Bull Creek, where, killing a deer, we went into camp." . . . I was strongly impressed by the simple and upright character of Captain Walker. . . . All that I have ever claimed for myself is, that I was *one* of the party of white men who first *entered* the Yosemite Valley as far as known to the Indians.

Bunnell further says that Captain Walker told him that he "once passed quite near the valley on one of his mountain trips; but that his Ute and Mono guides gave such a dismal account of the cañons of both rivers, that he kept his course near to the divide until reaching Bull Creek, when he descended and went into camp, not seeing the valley proper."

Walker's River, Lake, and Pass were named for Joseph Walker. It is to be noticed that Bunnell's name is nowhere attached to any point connected with the Yosemite, and even the government publications I have seen fail to associate his name with the discovery of the Yosemite. On the contrary a statement reads:

The Yosemite was discovered to the world in 1851 by Captain John Boling, while pursuing hostile Indians, with a detachment of mounted volunteers.

The Indians called it the heart of the Sky Mountain, or *Abwanee*, "the deep grass valley."

<sup>5</sup>United States Railroad Administration. National Park Series. Yosemite National Park, California.

<sup>6</sup>General Information Regarding Yosemite National Park, 1919. Washington, 1919, Government Printing Office.

<sup>7</sup>Matthes, F. E.: Sketch of Yosemite National

Later the name *Yo Semite* was given to the valley, its meaning being "the great grizzly bear," and subsequently, when the National Park was established, this famous name was retained.<sup>5</sup>

Another publication also says: "The Yosemite Valley was discovered in 1851 by Captain John Boling," etc.<sup>6</sup>

Another publication declares that "the valley was discovered in 1851; when a detachment of mounted volunteers, under Capt. John Boling, in an effort to put an end to the depredations of the Indians that infested the region, pursued them to their mountain stronghold. The tales the soldiers brought back of the marvelous scenery of the valley induced J. M. Hutchings, who was then gathering data on California scenery, to organize in 1855 an exploratory expedition to the Yosemite Valley."<sup>7</sup>

Galen Clark, who in 1857 discovered the Mariposa Grove of big trees, makes no mention of Bunnell in his book.<sup>8</sup> He went to California from New England in 1853, two years after the discovery of the Yosemite. He was made guardian of the Yosemite Valley.

John Muir gives an excellent and brief account of the discovery of the Yosemite, without, however, paying much attention to Dr. Bunnell. He says "After supper, seated around a big fire, the wonderful Valley became the topic of conversation and Dr. Bunnell suggested giving it a name. Many were proposed, but after a vote had been taken the name 'Yosemite,' proposed by Dr. Bunnell, was adopted almost unanimously to perpetuate the name of the tribe who so long had made their home there."<sup>9</sup> (Muir spells the name "Bunell.")

Bunnell's book on the discovery appeared Park and Account of the Origin of the Yosemite and Hetch Hetchy Valleys. Department of the Interior, Washington, 1912.

<sup>8</sup>Clark, Galen.: The Yosemite Valley. Yosemite Valley, Cal., 1911.

<sup>9</sup>Muir J.: The Yosemite. New York, 1912.

in 1880;<sup>10</sup> in 1890 a discussion in *The Century Magazine*<sup>11</sup> brought from Dr. Bunnell a response giving a clear and definite account of the event. An abstract is given here:

I did not fix the day of the month, but remembered that the discovery occurred during a long-continued rain and snow storm at about the time of the vernal equinox. That statement was verified at the time by James M. Roan and George H. Crenshaw, two comrades who, with the writer, were the first white men to enter the valley, and who were then members of the California legislature. . . . Major Savage, our commander, had waited at our camp in the foothills knowing that rain below indicated snow in the mountains, and that by marching in and through the storm we would be most likely to surprise and capture the hostile Indians.

Bunnell tells of the march, then:

Fortunately we had provided barley for our animals, and they did not suffer for lack of forage. After an Indian village was captured, Indian runners were dispatched to bring into headquarters the Indians in hiding; but no response was made by the Yosemite. Upon a special envoy being sent Ten-ie-ya, their chief, came alone, and stood in dignified silence before one of the guard until ordered into camp. Ten-ie-ya was immediately recognized and kindly cared for, and after he had been well supplied with food Major Savage informed him of the orders of the Indian Commission under whom we were acting. The old sachem was very suspicious, but finally agreed to conduct an expedition into his beloved valley.

Only a few men were required for this service, though all volunteered, notwithstanding it had been represented that horses might not be able to pass along the rocky trail. Finally a foot race was ordered to determine the fleetness, and consequent fitness, of those most anxious to go; some in their anxiety to win the race ran barefoot in the snow.

<sup>10</sup>Bunnell, L. H.: *Discovery of the Yosemite and the Indian War which led to that Event*. Chicago, 1880. 3rd ed., N. Y., 1892. 4th ed., Los Angeles, 1911, G. W. Gerlicher.

<sup>11</sup>*Century Magazine*, 1890, xl, 795-797.

Here follows an account of the expedition through snow from three to five feet deep, and in some places deeper; and Bunnell goes on with:

The trip was looked upon as likely to be only an exploration of some mysterious cañon. The importance of recording the date of the discovery of the Yosemite did not impress itself upon my mind at the time, for I became completely absorbed in the sublimity of my surroundings. It seemed to me that I had entered God's holiest temple, where were assembled all that was most divine in material creation. For days afterward I could only think of the magnificence, beauty and grace of the waterfalls, and of the mountain scenery; and an almost total lack of appreciation of the event on the part of Major Savage caused me to think him utterly void of sentiment.

Such experiences were not likely to have been soon forgotten, and hence my surprise when I saw in print the statement that the Yosemite Valley was first entered by the Mariposa Battalion on May 5 or 6, 1851, when the rainy season would have been past. This statement is said to have been officially made by our adjutant, and if so, must refer to the date of our second entrance, as our adjutant was not with us on our first entrance or discovery.

Bunnell says that:

Adjutant Lewis was a most genial, kind-hearted gentleman, but I never knew any duties he performed in the field.

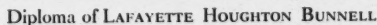
As a matter of fact, our Adjutant was not with us when the discovery was made in March, nor were there ever but two companies in the Yosemite at any time, Boling's and part of Dill's. Captain Dill himself was detailed for duty at the Fresno, after the expedition in March, as was also the adjutant. In making out his report, Mr. Lewis must have ignored the first entry of the valley by the few men who discovered it, and made his first entry to appear as the date of the discovery. This may or may not have been done to give importance to the operations of the battalion. I have never seen the report.

I do not wish to call in question the motives of our officers, but our little squad who first



He enlisted in "Company B, Second Wisconsin Cavalry Volunteers in November, 1863, and was discharged March 1, 1865, to accept a commission as assistant-surgeon Thirty-sixth Wisconsin Infantry Volunteers. He became surgeon in July, 1865, and was

"M.D." appears after his name on the title-page of each of his books, but the fact of his medical education has been most



<sup>12</sup> Aubery, J. M.: The Thirty-sixth Wisconsin Infantry (Army of the Potomac).

"much against his will;" and for nearly two years he read, and attended private clinics and demonstrations. After some experiences of frontier life he again turned to medicine, studying with Dr. Scoville at Detroit, but gave up to enter the Mexican War. While his regiment was quartered at Cordova, Mexico, he had charge of the hospital, and was in medical charge of a battalion at the close of the war.

On October 20, 1864, he received M.D., designated "honorary," from LaCrosse Medical College, which was instituted in



SARAH SMITH BUNNELL  
(MRS. L. H. BUNNELL)

the autumn of that year. The episode of this college is a brief and almost forgotten chapter of Wisconsin medical history.<sup>13</sup> Its charter was granted April 18, 1864, to Dugald D. Cameron, P. S. McArthur, J. B. G. Baxter, William L. Kennett, Ewen H. McMillan, William T. Wenzell and Augustus Brummel, as charter members.<sup>14</sup>

<sup>13</sup>History of LaCrosse County, Wisconsin, 1881.



Grave of the late DR. BUNNELL in Woodlawn Cemetery, Winona, Minnesota. Marked by the G. A. R. emblem.

As he grew old his chief occupations were reading, writing and gardening. At the age of seventy-three he made the valuable contribution to local history referred to, entitled "Winona."<sup>15</sup>

After the Civil War he settled at Homer, Minnesota. He married Sarah Smith, daughter of Joel and Anna Smith, early settlers, and sister of Edward S. Smith, prominent in railroad and other interests. They had no children. Bunnell died at Homer on July 21, 1903, and was buried at Woodlawn Cemetery, at Winona. His grave is

<sup>14</sup>Dr. William Snow Miller is in possession of interesting facts relating to this ephemeral institution and will doubtless publish them.

<sup>15</sup>Winona and Its Environs on the Mississippi in Ancient and Modern Days. Winona, 1897.

marked solely by the G. A. R. emblem with the small flag. He is buried in the family lot of his brother-in-law, E. S. Smith. The large shaft is the Smith family monument.<sup>16</sup>

The credit of the discovery belongs to Bunnell, for after seeing the Yosemite Valley at a distance his interest and poetic imagination were whetted by its seeming grandeur and he kept turning it over in his mind for two years; he alone of the little

<sup>16</sup>Information and photograph through the kindness of Judge H. L. Buck, postmaster, Winona, Minn.

group that entered on a punitory expedition went eager and thrilled with the zest of discovery. He fully appreciated the opportunity, and was filled with a sense of mystery. His companions were impassive and unimpressed, while he was exulting in the glories that unfolded before them; he became its baptismal sponsor and gave the valley its euphonious name and later wrote about it in a never failing spirit of enthusiasm.

For these reasons we claim that Dr. Lafayette Houghton Bunnell was the true discoverer, about March 21, 1851.

#### A MEMORIAL STONE FOR THE GRAVE OF DR. BUNNELL

As Dr. Kelly states, the grave of Dr. Bunnell remains unmarked save for the G. A. R. emblem.

Dr. Kelly asks that those who feel interested in the plan forward such amounts as they may choose to give for the purpose.

It is to be hoped that such an oppor-

tunity to honor a real medical pioneer will not be neglected by the members of his profession. One dollar will be gladly received as a donation.

Those desiring to contribute should send their contribution to DR. HOWARD A. KELLY, 1406 Eutaw Place, Baltimore, Md.





## EDITORIALS

### DR. WILLIAM MACMICHAEL

In connection with the great interest which the Balkan States have recently assumed to all the world, the "Journey from Moscow to Constantinople in the years 1817, 1818," by the author of "The Gold-Headed Cane," is well worth reading.

Macmichael was elected a Radcliffe travelling fellow in 1811. As travel in the parts of Europe in which lay the chief medical centres was precluded by reason of the Napoleonic wars, he abandoned the usual routes and instead travelled in Russia, the Balkan states, Greece and Turkey.

Dr. Nias in his most entertaining work "John Radcliffe, a Sketch of His Life with an Account of His Fellows and Foundations," directs attention to the manner in which the Radcliffe fellowships were diverted from their original purpose. In Radcliffe's time the course in medicine at Oxford was, to say the least, somewhat perfunctory and Nias thinks the idea of their founder was to enable the beneficiaries to travel and spend some years in the medical centres in Europe, with the hope that on their return they might remain at Oxford, living on their fellowship, and adding, by the knowledge acquired in their travels, to the lustre of the medical faculty of the University. Unfortunately as Dr. Nias shows, but few of those who won the fellowship settled in Oxford; the vast majority

preferring London as the sphere of their activities. Except for some valuable observations on the subject of contagious diseases and the value of quarantine, which he subsequently published, we doubt if Macmichael added much to his medical knowledge during his peregrinations. The book describing his journey from Moscow to Constantinople contains, however, very piquant and vivid descriptions of the life and customs of the inhabitants of Russia, Wallachia, Moldavia, Bulgaria, and the other principalities through which he passed. Macmichael had been in Moscow shortly after its destruction in 1812, and he expresses his admiration of the zeal and energy which had been manifested in repairing the damage it had sustained. He gives an interesting picture of the contrast between the rich and poor in Russia, and in the light of recent events some of his utterances are prophetic. As he departed from Moscow on December twenty-second, most of the journey was necessarily made in sleighs, and it must have required considerable fortitude on the part of himself and his travelling companion, a Mr. Legh, to undergo the hardships incidental to such a trip in mid-winter. At Kiev and other towns through which they passed Macmichael is struck with the number of Jews and with the terms upon which they lived with their Christian

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neighbors. Moldavia and Wallachia were provinces of Turkey at the time when Macmichael travelled through them. He was presented to the Hospodar, or Prince of Moldavia, and also to the Hospodar of Wallachia. After passing across Bulgaria and Serbia he finally reached Constantinople of which he gives an interesting account. From that city Macmichael returned to England but Mr. Legh continued his travels into the Holy Land and they are described in a concluding chapter of the book.

The "Journey" is illustrated by drawings made by Macmichael, which, though somewhat crude from an artist's standpoint, depict vividly the scenes described in the text.

The book, though rare, is not unobtainable and is well worth perusal by those who would compare things as they were with things as they are, our own conclusion being that in the countries described in many respects they have changed but little for the better in the hundred years which have elapsed since Macmichael's journey.

#### EDITORIAL NOTES

THE SECOND INTERNATIONAL CONGRESS ON THE HISTORY OF MEDICINE will be held July 1 to July 5, 1921, in the Hall of the Faculté de Médecine of Paris. It will comprise three sections, Medicine, Pharmacy, and Veterinary Medicine. The Congress will be presided over by Prof. Jeanselme and Prof. Menetrier. In conjunction with the Congress there will be a loan exhibition of objects of interest in the history of medicine.

A readership in the history of medicine has been recently established in University College, London, which has been filled by the appointment to it of Dr. Charles Singer,

of Oxford. This may be regarded as another indication of the increasing interest in the history of medicine, and the growing importance which is attached to its study. It is fortunate that Dr. Singer can combine the duties of the new position with those of the one he already holds at Oxford.

The Congress of the Italian Society of the History of Medicine will be held in Bologna, in October, 1921. The meeting will be presided over by the president, Prof. D. Majocchi. A special exhibit of objects relating to the history of dermatology will be on view at the Congress.



## HISTORICAL NOTES

### MACHIAVELLI ON TUBERCULOSIS

The following quotation from Machiavelli<sup>1</sup> indicates that he had a knowledge of the natural history of tuberculosis that is usually considered to be an acquisition of recent times.

Speaking of the attitude of the Romans toward the Macedonians he says:

The Romans on this occasion did what ought to be done by every wise prince, whose duty it is not only to provide a remedy for present evils, but at the same time to anticipate such as are likely to happen; by foreseeing

<sup>1</sup> The History of Florence together with the Prince. London, 1898.

them at a distance, they are easily remedied; but if we wait till they have surrounded us, the time is past, and the malady is become incurable. It happens then as it does to physicians in the cure of a consumption, *which in the commencement is easy to cure, and difficult to understand; but when it has neither been discovered in due time, nor treated upon a proper principle, it becomes easy to understand, and difficult to cure.* The same thing happens in state affairs, by foreseeing them at a distance, which is only done by men of talents, the evils which might arise from them are soon cured; but when, from want of foresight, they are suffered to increase to such a height that they are perceptible to every one, there is no longer any remedy.

### SIR HENRY HALFORD'S ACCOUNT OF THE OPENING OF THE TOMB OF CHARLES I

For many years the exact place in which King Charles I was buried after his execution was doubtful, although it had been accurately described by one of the grooms of his bedchamber, Mr. Herbert. King Charles II had endeavored to find his father's body with the view of reinterring it with suitable ceremonies to compensate for the indignities shown on its previous burial. It was known that he had been interred somewhere in St. George's Chapel at Windsor, but during the Cromwellian regime this chapel had undergone so many alterations that those who sought for the tomb were baffled. In 1813, however, in making some alterations under the choir of the chapel an opening was accidentally made through the wall of the vault in which

King Henry VIII's body had been placed, and besides the coffin of King Henry VIII there were found to be two other coffins in the vault, one of Jane Seymour and the other that of Charles I. The Prince Regent in order to clear up any doubt as to the correctness of the latter supposition ordered that the coffin be opened and the body examined. This was done on April 1, 1813, in the presence of the Prince Regent and several other persons.

Sir Henry Halford, who was among these, wrote an account of the circumstances and of his examination of the body which is published among his collection of essays and addresses. The event has so much historic interest and the written account of it is so rare, that we here reproduce the



essential portions of it with a drawing made of the king's head as it appeared when exhumed.

On removing the pall, a plain leaden coffin with no appearance of ever having been inclosed in wood, and bearing an inscription "King Charles, 1648," in large, legible characters, on a scroll of lead encircling it, immediately presented itself to the view. A square opening was then made in the upper part of the lid, of such dimensions as to admit a clear insight into its contents. These were, an internal wooden coffin, very much decayed, and the body carefully wrapped up in cere-cloth, into the folds of which a quantity of unctuous or greasy matter mixed with resin, as it seemed, had been melted, so as to exclude, as effectually as possible, the external air. The coffin was completely full; and from the tenacity of the cere-cloth, great difficulty was experienced in detaching it successfully from the parts which it enveloped. Wherever the unctuous matter had insinuated itself, the separation of the cere-cloth was easy; and when it came off, a correct impression of the features to which it had been applied was observed in the unctuous substance. At length, the whole face was disengaged from its covering. The complexion of the skin of it was dark and discoloured. The forehead and temples had lost little or nothing of their muscular substance; the cartilage of the nose was gone; but the left eye, in the first moment of exposure, was open and full, though it vanished almost immediately; and the pointed beard, so characteristic of the period of the reign of King Charles, was perfect. The shape of the face was a long oval; many of the teeth remained; and the left ear, in consequence of the interposition of the unctuous matter between it and the cere-cloth, was found entire.

It was difficult, at this moment, to withhold a declaration, that, notwithstanding its disfigurement, the countenance did bear a strong resemblance to the coins, the busts and especially to the pictures of King Charles I by Vandyke by which it had been made familiar to us. It is true, that the minds of the spectators of this interesting sight were well prepared to receive this impression; but it is also certain that such a facility of belief had been occa-

sioned by the simplicity and truth of Mr. Herbert's narrative, every part of which had been confirmed by the investigation so far as it had advanced, and it will not be denied that the shape of the face, the forehead, an eye, and the beard, are the most important features by which resemblance is determined.



CHARLES THE FIRST

1613.

Drawing made of the head of CHARLES THE FIRST, when exhumed in 1813.

When the head had been entirely disengaged from the attachments which confined it, it was found to be loose, and, without any difficulty was taken up and held to view. It was quite wet, and gave a greenish red tinge to paper and to linen which touched it. The back part of the scalp was entirely perfect, and had a remarkably fresh appearance; the pores of the skin being more distinct, as they usually are when soaked in moisture; and the tendons and ligaments of the neck were of considerable substance and firmness. The hair was thick at the back part of the head, and, in appearance, nearly

black. A portion of it, which has since been cleaned and dried, is of a beautiful dark brown colour. That of the beard was a redder brown. On the back part of the head it was more than an inch in length, and had probably been cut so short for the convenience of the executioner, or perhaps by the piety of friends soon after death, in order to furnish memorials of the unhappy king.

On holding up the head to examine the place of separation from the body, the muscles of the neck had evidently retracted themselves considerably; and the fourth cervical vertebra was found to be cut through its substance transversely, leaving the surfaces of the divided portions perfectly smooth and even, an appearance which could have been produced only by a heavy blow, inflicted with a very sharp instrument, and which furnished the last proof wanting to identify King Charles the First.

After this examination of the head, which served every purpose in view, and without examining the body below the neck, it was immediately restored to its situation, the coffin was soldered up again, and the vault closed.

Sir Henry Halford, the author of the

above record, who was born in 1766 and died in 1844, had the largest and most fashionable practice in the London of his time. He was vulgarly known as "the eel-backed baronet" because of the means he employed to ingratiate himself in royal favor. His real name was Vaughan; he had changed it to Halford in 1809 on receiving a large bequest from a relative who bore the latter surname. In the same year he was made a baronet. He was physician to George III, George IV, and William IV. When George III died, Sir Henry rode posthaste from the royal deathbed to notify his brother of his accession. He was president of the College of Physicians from 1820 until his death. He is said to have retained in his possession the fourth cervical vertebra of Charles I and to have been in the habit of producing it at his dinner table, showing it to his guests as a curiosity. It is curious that apparently no microscopic examination was made to ascertain the character of the supposed bloodstains.

FRANCIS R. PACKARD.



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## CORRESPONDENCE

### PROCEEDINGS OF THE DUTCH SOCIETY FOR THE HISTORY OF MEDICINE, PHYSICS AND MATHEMATICS

We have received from Dr. M. A. van Andel of Gorinchem, Netherlands, the accompanying interesting reports of the proceedings of the Dutch Society for the History of Medicine, which we take pleasure in publishing as an indication of the awakening interest in medical history in other countries. The ANNALS is always glad to receive reports or abstracts of the proceedings of societies concerning the history of medicine for publication in its columns.

The Dutch Society for the History of Medicine, Physics and Mathematics (Vereeniging voor geschiedenis der genees-natuur-en wis kunde) had a meeting on October 16 and 17, 1920 at Gorinchem (South Holland) under the presidency of Prof. E. Cohen (Utrecht). The following speeches were delivered:

Dr. van Schevensteen (Antwerp)—The folklore of the pilgrimages in Belgium for the cure of diseases of the eyes—There still exist in Belgium a quantity of places of pilgrimage famous for their holy patron who is able to cure all sorts of diseases. The patrons for the cure of diseases of the eyes are St. Godelive, St. Lucia, St. Leonardus, St. Margarita of Louvais and the Apostle Paul. They are worshipped by prayers and by the giving of ex voto offerings representing a pair of eyes made of pasteboard, wood, wax or tin plate. The pilgrims carry little paper vanes bearing an image of the saint and his adventures. St. Lucia, for example, is represented holding a plate with her eyes on it, since her patronage is derived from this phase of her martyrdom. Many medals, images and popular biographies of these saints sold on such occasions, are also of folkloristic interest.

The speaker showed a large collection of these very naive offerings and images reminiscent of the pagan period of religious medicine.

Dr. J. B. F. van Gils (The Hague)—Emblemata of medical interest—Our forefathers of the seventeenth and eighteenth centuries were fond of all sorts of printed emblems explained by a poetical subscription. Famous artists as Holbein, Jan Luyken, Otto Vaenius, Theod. de Bry, Jr. and Arnold Houbraken have contributed to these collections and well-known poets as Coornhert, Roemer Visscher, Hooft and Cats have provided the explanations. Such emblems referring to scenes of the family life of our ancestors are of great historical interest and often contain information referring to the medicine of that time. Dr. von Gils showed about 60 specimens of this kind proving that these booklets and images are neglected by the authors of illustrated books on medical history such as Hollander, Richet and Peters.

Dr. E. D. Baumann (Oude Wetering)—The pathology and therapy of the gout in Greece and Rome—Nearly all classic authors beginning with Hippocrates are acquainted with this disease and its causes. Hereditary disposition, gluttony, debauch and drunkenness coupled with a lazy conduct of life are considered the principal etiologic factors. Galenus ascribes the many cases of gout in his time to the luxury and intemperance of his countrymen. Several classics do not always distinguish clearly between gout and other diseases of the joints; they attribute a great influence to cold and dampness. Aretaios delivers a masterly description of an acute attack of gout which is still worth reading. The therapy, consisting chiefly of dietetic and hygienic measures, was



in every respect reasonable. Remarkable is the classic treatment by means of an electric thornback, the patient standing with bare feet on this fish until its electrical power was exhausted.

Dr. J. G. de Lint (Gorinchem)—Dutch Leproseries—Since leprosy was very common in the low countries in former centuries, several means for isolating these sufferers were applied to prevent the infection of the healthy population. In the beginning, the lepers were expelled from the community and compelled to live in isolated dwellings without communication with their fellow-citizens. They were, however, allowed to implore their charity, but were required to wear a special dress and to announce their approach by the agitation of a clapper. In later centuries nearly every city erected a leprosy generally outside of the city wall. The inhabitants were at most times allowed to visit the town on fixed days to gather the alms of the charitable. Sometimes they gathered in a solemn procession with drummers, trumpeters, emblems and ensigns, begging in this way the finances for their support. As cases of leprosy became very rare toward the end of the seventeenth century, the greater part of the leproseries were rebuilt or demolished. Fortunately there exist still a sufficient number of pictures, engravings and local maps to inform us of their appearance and arrangement. Dr. de Lint presented a collection of these pictures.

Dr. H. J. Lulofs (Gorinchem)—The "warnings" of Hippocrates—The prescriptions of the father of medicine regarding the conduct of the physician towards his patients and his colleagues are still to us of the greatest interest. Wisdom and dignity are the ornaments of the honest physician and imbue his patients with confidence. The medical art requires charity, application, self-constraint and resignation; eagerness after gain and blustering defile such a noble office and are the attributes of the quack, who robs and maltreats the sufferers. He emphasizes that worthy physicians should respect each other and avoid quarrelling since unworthy behaviour injures not only the physicians but also their art. Several prescriptions regulating the manners, the appearance and the costume of the doctor, which are

estimated to be of real importance, conclude this interesting chapter of medical ethics of more than two thousand years ago.

Dr. M. A. van Andel (Gorinchem)—Poisonous herbs in medicine and magic. The oldest period of medicine is a mixture of knowledge, superstition and religious belief. Especially in therapeutics the remains of that primitive state continued till later times.

The influence of medicinal herbs was attributed to magical powers concealed in them since the real causes of their effect on the body of man were unknown. The narcotic properties of several herbs, causing sleep, insensibility, dreams, hallucinations and madness made a deep impression on the minds of our ancestors and were applied in various ways.

The hallucinations of the witches in the Middle Ages are comparable to those of the medicine men of savagery which were partly provoked by the consumption of vegetable poisons. The unguent of which the witches made use to anoint themselves in preparing for the Sabbath contained several of such herbs as belladonna, henbane, nightshade, thornapple and mandragora. Johannes Wierius relates having witnessed such a proceeding, which was followed by sleep and unconsciousness. After being awakened the witch herself assured those present, that she had experienced the Sabbath.

The superstitious belief of sorcery should be attributed not only to general suggestion but also to the abuse of such poisons which likewise played a part in the frenzies of those who were convinced that they could transform themselves into bugbears. The herbs used for such purposes boasted also of aphrodisiacal powers; the state of excitation following their consumption made them apt to be ingredients of philters. Especially was the mandragora elected for such purposes, the effect, however, being attributed to its supernatural and magical powers. In the greater part of the fantastic descriptions of such herbs one can discover some accurate observation, the exact interpretation of which, however, is impeded by the superstitious beliefs prevailing at that time.

Another meeting of the society was held on December 18 at Amsterdam (University Building) under the presidentship of Prof. E. Cohen.

At this meeting the following papers were read:

A. J. M. Lamers (Hertogenbosch)—Medical Ex-Libris—In his introduction the speaker discussed the history of bookplates. In its present form, a loose ticket, pasted on the flyleaf of a book, the bookplate dates from the middle of the fifteenth century and is of German origin. The oldest Dutch specimen appears in 1597. The different periods of art are reflected in the style of old bookplates, the Renaissance, the Caroque, the Rococo, the style of Louis xvi and others can be recognized. In the eighteenth and nineteenth century a period of decline is perceived, which in our day is followed by a revival, in some cases even leading to an excess, as, for example, the use of bookplates exclusively as objects of collection. The bookplate, serving to protect and to adorn the book, has to answer several demands as to originality, individuality and artisticity. The owners of several medical bookplates, of which the speaker showed a large collection, have generally well succeeded in expressing their occupations or their preferences by means of emblems and sentences referring to their speciality, as surgery, obstetrics or psychiatry.

Dr. H. J. Lulofs (Gorinchem)—The Asiatic and European Race, according to Hippocrates—Hippocrates was the first author who made an attempt to show the dependency of the general health, temper and character of man upon the geographical situation, the climate, the atmospheric and the hydrological conditions of the place in which he lives. All sorts of diseases are governed by such influences, not the gods, but nature is responsible for the pathologic conditions prevailing in a distinct country. The quality and the composition of the water, together with the way it appears, viz., as rivers, brooks, sources of marshes and the predomi-

nating direction of winds have a special influence on the inhabitants of a country. This theory is illustrated by a detailed comparison between the inhabitants of Asia and Europe. The soft and moderate climate of Asia rears a healthy race of a proportionate stature, but causes also a certain uniformity and prevents the creation of personalities surpassing mediocrity. The climate of Greece, with its different seasons, its soil of varying composition and fertility, gives rise to the great differences between the inhabitants of this country. For the same reason the Greek becomes a personality and distinguishes himself from all other nations. Diseases and complexions also depend upon such external circumstances. The Scythians, inhabiting the great marshy steppes, are forced to a wandering way of living. They chiefly dwell in wagons or ride on horseback. Thus they acquire a uniform type and become weak and enervated. Effeminacy and impotency are the consequences of such a manner of living. The number of children is small, chronic diseases are numerous. It may be ascribed to the imperfect knowledge of his time, that these original thoughts are but imperfectly elaborated and that other influences, dominating the public health, for example, those of race, customs and education are not considered. Yet this curious work fully deserves our attention. Its want of equilibrium is a consequence of the scarcity of the solid foundations on which we are accustomed to building our arguments. Although Hippocrates could not arrive at valid conclusions on this question, yet he succeeded in pointing at the connection between medicine and geography, which has proved to be of such great importance.

M. A. VAN ANDEL.  
Secretary.



## BOOK REVIEWS

**IDLING IN ITALY.** *Studies of Literature and of Life.*

By Joseph Collins, New York. Charles Scribner's Sons, 1920. 12 mo., 316 pp. Price, \$3.00.

It is always a pleasure to welcome the excursions of a physician in the field of general literature and it is an interesting subject of inquiry as to why the number has not been larger. The title of this volume raises a question as to its accuracy, for to the majority the study of the material required for the making of this book would represent much hard work. Perhaps the study of Italian literature represents idling to a neurologist—the discussion of which might offer a subject for a symposium in a neurological society.

The author has given us a series of chapters which in the first half of the book deal with Italian literature and writers, with particular reference to poetry and fiction. It is very true that the average American knows little of Italian literature and, as Dr. Collins points out, there is little to guide the inquirer in the way of books about books. One must search out the matter himself and go to the original sources, a proceeding which involves more expenditure of time and energy than many can give. May not the same be said about our knowledge of Italian medicine? How many medical men in this country have even a fragmentary knowledge of the medical work done in Italy in the last twenty-five years? The days are gone when the English speaking world looked upon the teaching of medicine in Italy as the best to be obtained. Visit Padua, for example, and study the number of records of English and Scotch students and one realizes the number who went to

Italy for the hall-mark. It would be an advantage today if more of our young graduates could spend a period of study in Italian medical schools.

There are seven chapters dealing with Italian literature. To many of us the majority of the authors and their works are unknown, yet the sketches and discussions are so given that one reads with interest. There are many illuminating comments and illustrations which owe something to the author's knowledge of psychology, normal and otherwise. The general impression which one gains from Dr. Collins' studies is not a very pleasant one on the whole as to the character of some modern Italian literature but perhaps this might be applied to other nations also. Dr. Collins sums up his estimate of the work of Italian writers of fiction of the past few years by saying that it is "imaginatively sterile and emotionally fecund;" "they are incident-relaters, narrators of personal experiences, observers armed with cameras." His study of D'Annunzio is an illuminating one.

The chapters in the second half of the book deal with a variety of subjects, the majority concerning some phase of the war. It is not easy to review them in any systematic way although there are points about which many readers will disagree with the author, which is not to the book's discredit. There are keen comments which often make the reader pause and reflect, illuminating sentences, which one reads more than once, and striking descriptions which one enjoys. There is a pathetic picture drawn of the condition of the Italian prisoners returned from Austria with tuberculosis.



Perhaps the chapter on "Sentimentality and the Male" is the most philosophical and in it there is much to stimulate thought. There is an interesting chapter on that queer character, Samuel Butler, and much discussion on the place of woman in the life and events of today.

There are some questions which may be asked. What kind of reception did the wedding guests give the ancient mariner? When the author says that "all which we now speak of as democracy flowed from one master mind in Cromwell's little army," the reviewer feels that this is doubtful and that to an individual named John Calvin much of this credit is due. It would be interesting to know the reason for the author's fondness for the use of the word obstacle as a verb. "Nothing obstructed my pleasure as much" is not pleasing English. But these are minor points and we have to thank Dr. Collins for the interesting series of comments and reflections he has given us. It must be a dull mind which is not stimulated by the reading of them. T. M.

AMERICAN MEDICAL BIOGRAPHIES, By Howard A. Kelly, M.D., LL.D., F.A.C.S., Hon. F.R.C.S. (Edin.) and Walter L. Burrage, A.M., M.D. Baltimore. Norman, Remington Company, 1920. 8vo., pp. 1320.

In the preface to this splendid volume Dr. Kelly expresses the hope, which we think is fully justified, that it will become a worthy companion to Garrison's "History of Medicine." It is not often that within ten years after the publication of a large historical work its author has the opportunity or courage not only to revise but to publish as a practically new book a work of the large scope of Dr. Kelly's. He courageously acknowledges the defects which existed in his previous compilation, omitting many biographies which were not worthy of insertion and rewriting many not up to the high standard he set himself. As it now

stands it is as near perfection as such a work can be, certainly perfect in its plan and nearly so in its execution. No doubt there are biographies included which will be deemed by some superfluous, and others omitted which one would expect to find. But in so large a field we think it is well to include even some names which may seem too obscure for the dignity. A careful search fails to reveal any serious omissions.

The individual biographies manifest the careful supervision to which they have evidently been submitted by the editors. The result is a more harmonious whole than was the "Cyclopedia of American Medical Biography." As stated in the preface Drs. Kelly and Burrage have deleted from the Cyclopedia 51 biographies, replaced with new biographies 62 others, and added 815 entirely new ones, making the total here presented to the reader 1948. They make due acknowledgment of previous attempts at the compilation of biographies of American physicians, commencing with Thacher and including those of Williams, Gross, Atkinson, Stone, and Watson, none of which can be justly compared with the present for completeness or accuracy.

It is impossible in noticing a work such as this to go into detail as regards the various biographies. Suffice it to state our perusal has revealed in them a quite remarkable uniformity in scope and execution. A few minor inaccuracies are bound to occur in so large a work. Thus in the article on Joseph Leidy, George Bacon Wood is named as George C. Wood, and in the article on Provost William Pepper he is stated to have been physician to the Pennsylvania Hospital, a position he never held. Elisha Kent Kane is stated to have been a resident physician "in the Pennsylvania Hospital, Blockley," whereas Blockley, in which he was a resident physician, is the Philadelphia Hospital, and Kane was never connected with the Pennsylvania Hospital in any capacity. It would be not only invidious

to search for but impossible not to find a few such slips in such a *magnus opus*. The work is unusually free from them.

The omission of illustrations from the book is commendable. These add greatly to the expense without increasing the value. In the separate biographies information is given as to where portraits can be seen and this information is sufficient to supply the wants of any who desire to see or use them. Every writer on American medical history will find it absolutely essential in his labors.

FRANCIS R. PACKARD.

THE SCHOOL OF SALERNUM (REGIMEN SANITATIS SALERNITANUM). The English Version, by Sir John Harington; History of the School of Salernum by Francis R. Packard, M.D. and a Note on the Prehistory of the Regimen Sanitatis by Fielding H. Garrison, M.D. New York. Paul B. Hoeber, 1920. 12 mo., pp. 216.

This is a delightful book, for which the medical profession owes a debt of gratitude to the editor and the publisher. The Regimen Sanitatis is one of the few survivals of the great Salernitan School, which rivaled Paris and Montpellier in the Middle Ages, and which, like the University of Wittenberg, where Hamlet and Horatio studied, is no more. The original is in the Latin rhyme so popular in medieval times, though not in the short, stirring couplets of Celano's "Dies iræ." It deals in minute detail with the habits of daily life, with the best

methods of promoting the normal action of the bodily organs; with the diet in health and in disease—what to eat in the heat of summer and the cold of winter; how much to sleep and when to bathe, and upon all these methods the Regimen's advice is for the most part sane and sound, far sounder, indeed, than that of the medical books of two or three centuries later. No wonder it passed through a vast number of editions during the Middle Ages and the Renaissance period. Much space is devoted to the subject of bleeding, the unknown writer expressing the naïve views current in his time. The English translation is by John Harington, a contemporary of Shakespeare and a tutor of Prince Henry, for whose benefit the translation was probably made. Harington's translation is free from pedantry and though adhering closely to the spirit of the Latin, renders the text in quaint rhyming couplets full of charm and vigor. Delightful woodcuts appearing in some of the earlier editions have been wisely reproduced. In addition, the editor, Dr. Francis R. Packard, who has done so much to stimulate an interest in medical history in this country, has written, as a preface, a short history of the University of Salerno, while Dr. Fielding H. Garrison contributes an erudite chapter on the prehistory of the Regimen sanitatis. No physician who is interested in the history of his calling will feel that his library is complete without this book.

DAVID RIESMAN.







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# ANNALS OF MEDICAL HISTORY

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